OWNER HANDBOOK
JB SEDAN & WAGON

HOLDEN
CAMIRA

Vehicle Identification Certificate

Owner's Name Mr. Mrs. Miss ....

Address ....

Town .... Phone ....

State & Postcode ....

Reg. No. ....

Model Name ....

Vehicle Identification Number (V.I.N.) ....

Eng. No. ....

Odometer Reading ....

Selling Dealer's Stamp & Signature ....

Date of Acquisition ....

Pre Delivery Checklist .... Page 111
Delivery Certificate .... Page 112
Index .... Page 140

Part No. 92021685
April 1983

This handbook contains important information necessary for the good performance and maintenance of the vehicle. Please leave it in the vehicle at the time of resale to assist the new owner.

See inside back cover for Accidents (including Medical).

New Vehicle Warranty

HOLDEN

GMH

GENERAL MOTORS-HOLDEN'S SALES PTY. LTD.
(INCORPORATED IN VICTORIA)

GENERAL MOTORS-HOLDEN'S SALES PTY. LIMITED
(INCORPORATED IN VICTORIA)

New Vehicle Warranty

GENERAL MOTORS-HOLDEN'S SALES PTY. LTD. HEREBY WARRANTS THAT IT WILL MAKE GOOD, WITHOUT CHARGE, ANY DEFECT WHICH APPEARS IN THE VEHICLE IDENTIFIED IN THE VEHICLE IDENTIFICATION CERTIFICATE FOUND ON THE INSIDE OF THE FRONT COVER.

Provided

1. the defect has been notified to an authorised GMH Dealer or Service Dealer:
   (a) before the vehicle has travelled a distance of 20,000 km, or:
   (b) within 12 months of the date of delivery of the vehicle to the first retail purchaser (or in the case of a Demonstrator vehicle within 12 months of the date when it was first placed into service by the Dealer)
   whichever comes first, and
2. the vehicle has been returned to an authorised GMH Dealer or Service Dealer

And

3. the Dealer has determined that the defect complained of *is* one of material or workmanship and *is not* caused by:
   (a) misuse or abuse of the vehicle such as by racing, rallying, overloading, etc. or by neglect
   (b) operation of the vehicle after it is known to be defective
   (c) accident or deliberate act
   (d) atmospheric fallout or flood, hail, salt, etc.
   (e) failure to carry out proper maintenance service
   (f) alteration or modification of the vehicle
   (g) the fitting of parts or accessories not marketed by GMH
   (h) any work carried out on the vehicle by someone other than an authorised GMH Dealer or Service Dealer,

BY THE DEALER (or as otherwise decided by GMH Sales) MAKING GOOD THE DEFECT BY REPAIR OR, AT THE OPTION OF GMH SALES, BY REPLACEMENT.

Excluded from this Warranty are

- defects in tyres or tubes (these being warranted by their manufacturers), and services such as engine tuning, brake adjustment, replacement of air and oil filters, etc. which are required as part of normal vehicle maintenance.

This Warranty applies only to vehicles operated in Australia and is given to the person who is entitled to possession of the vehicle whether as owner lessee or otherwise and is given in addition to all rights conferred by law on that person.

Owners of vehicles operated outside Australia should consult their local dealer regarding the warranty applicable to their vehicles.

Notice to Customers

No GMH dealer or other person is authorised or permitted to give or make any statement assertion or undertaking in relation to the quality performance characteristics descriptions or fitness for any purpose of any GMH product or in connection with the supply of any GMH product, which is at variance with any written statement assertion or undertaking on any of these subjects given or made by General Motors-Holden's Limited or General Motors-Holden's Sales Pty. Ltd. in its published sales literature, and neither company accepts any liability for any such unauthorised action.

General Motors-Holden's Limited and General Motors-Holden's Sales Pty Ltd have franchised dealers in many parts of Australia for the sale of service parts and the provision of service to owners of GMH's products. Every endeavour is made to ensure that such dealers carry adequate stocks of service parts, and are equipped to provide satisfactory service, but neither General Motors-Holden's Ltd. nor General Motors-Holden's Sales Pty. Ltd. makes any promise that such parts or service facilities will be available, or available at any specific location or any particular time.

GMH Parts and Accessories Warranty

General Motors-Holden's Limited warrants in respect of GMH parts and accessories required as replacement parts, that it will make good by repair or at its option by replacement any defect occurring in any such GMH parts and accessories within 3 months from the date of acquisition or in the case of a GMH part or accessory which has been installed in a vehicle by a GMH Dealer or Service Dealer before such vehicle has travelled a distance of 6,500 kms from the date of installation, whichever first occurs.

A Message from GMH

Thank you for choosing Holden. Your new Camira is the product of many years research and planning and we are both pleased and proud of the result—we are sure you will be also.

To understand the features and to obtain the best performance from your new vehicle, please read this handbook and keep it in the vehicle at all times for quick reference.

Full understanding of the performance, warranty and maintenance will add greatly to your enjoyment of your new vehicle.

On behalf of all at GMH we wish you and your Camira many years of Happy Motoring.

HOLDEN

GMH

This handbook applies to all JB Camira models and therefore may contain explanations of some equipment not installed in your vehicle.

See inside back cover for ACCIDENTS (including medical).

SECTION 1

Getting to know your Camira

Running In, Fuel Economy, Safe Driving, Keys and Locks, Mirrors, Seats, Seat Belts.

SECTION 2

Instruments, Controls, Starting

Steering Column Controls, Instrument Panel, Dials, Controls and Warning Lights, Transmission Controls, Starting and Driving, Ventilation and Heating, Radio.

SECTION 3

Emergencies, Towing

Wheel Changing, Overheating, Warning Indicator Lights, Emergency Starting, Fuses, Bulb Replacement, Towing and Loading.

SECTION 4

Specifications, Emission

Serial Numbers, Model Identification and Dimensions, Engine Data, Capacities, Emission.

SECTION 5

Owner Relations, GMH Dealers

Owner Relations, Owner Relations Managers, Authorised GMH Dealers.

SECTION 6

Appearance, Maintenance, Service

Washing Tips, Cleaning, Interior and Exterior, Oils and Lubricants, Cooling Systems, Tyres, Maintenance Service Coupons.

GMH QUALITY SERVICE & PARTS

When it comes to servicing, remember that a GMH Dealer has the trained personnel and specialised equipment to correctly service your vehicle.

For the proper maintenance and performance of the vehicle use only quality GM and AC Delco parts which are identified by one of these trademarks.

The use of parts other than those marketed by GM or AC Delco may be detrimental to your vehicle and may void your New Vehicle Warranty.

AC Delco GM

All illustrations and specifications contained in this handbook are based on the latest product information available at time of publication approval. The right is reserved to make changes, at any time, without notice, in prices, colours, materials, equipment, specifications and models, and to discontinue models. Check with your Holden Dealer for complete information.

Section 1

Getting to know your Camira

Running in

With your Camira it is not essential to follow a formal running in schedule. However by observing a few simple precautions during the first few hundred kilometres you will contribute greatly to your Camira's future performance and economy of operation.

Up to 1500 kilometres, avoid driving at any one speed—either slow or fast—for any length of time. Include some higher speeds in your driving. This helps prolong the life of parts and helps with fuel and oil economy.

The most favourable engine speed during running in is between 1500 and 4000 rpm in all gears.

For the first 500 kilometres, heavy braking should be avoided, except in an emergency, since brake misuse during this period could impair future braking efficiency.

Never coast or run downhill with the engine not running or the ignition switched off, as these two conditions control the functions of many units necessary for your safety.

If you use a fuel too low in octane rating or if the ignition timing is out of adjustment, knocking, pinging or engine run-on may occur. Such conditions can also cause overheating of the engine and can damage it. If you notice such conditions take your car to your GMH Dealer and obtain his advice.

Damage to the engine under such circumstances is not covered by GMH New Car Warranty.

Fuel economy tips

How you drive and where you drive affect your fuel economy. Careful attention to driving as well as maintenance will help reduce your fuel bill.

Avoid

- **Long warm ups.** These are not necessary.
- **Hard acceleration**—avoid fast starts.
- **Excess loading weight.** The heavier the load the more fuel it takes to run.
- **Stop-start driving,** plan your trips ahead.
- **Excessive speed.** You will save on your fuel bill by driving at 80 km/h instead of 110 km/h.
- **Engine idling**
  If you have to wait for more than a few minutes, turn off the engine to conserve fuel. Three minutes of idling corresponds to almost a kilometre of driving.
- **Hard driving**
  This is most wasteful. Energy is wasted as heat when braking. Hard driving up to stopping points is wasting fuel, extra fuel is needed to accelerate again.

Check

- **Correct gear selection.** Do not race your engine whilst in neutral or in a low gear.
- **Change down**—when decreasing speed shift into the next lowest gear—**DO NOT slip the clutch.**
- **Air cleaner element.** A dirty air cleaner element reduces engine efficiency. Replace it at the specified intervals.
- **Engine tuning.** An out of tune engine cannot give good fuel economy.
- **Tyre inflation.** Under inflation wastes fuel. Inflate tyres to the maximum recommended pressure—see the tyre placard inside the instrument panel compartment.
- **Wheel alignment.** Incorrect alignment makes the front wheels drag and puts an extra load on your engine.

Fuel economy indicator* will help you save fuel

This gauge has been fitted to your Camira to help you save fuel. Its reading indicates how hard the engine is pulling.

Cruising

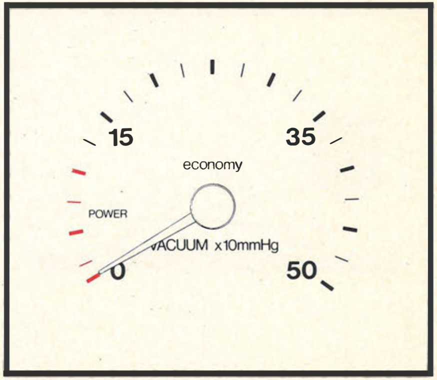
Remember that your carburettor is fitted with an accelerator pump for power when you put your foot down, and this squirts more petrol into the engine. To minimise fuel consumption you should minimise the pump's use when cruising. The vacuum gauge will tell you when you put your foot down while cruising by swinging to the left. Keeping the needle steady and at the highest possible reading will save fuel.

The higher your speed, the more fuel you use to overcome wind resistance, so you can minimise your fuel consumption by avoiding high speeds. The car's most efficient speed is about 60 km/h (in top gear) with the highest steady needle reading.

Accelerating or climbing

The engine develops power most efficiently around 200 mm Hg, and in the power region becomes less efficient as more petrol is used to develop power at the expense of economy.

So when accelerating or climbing hills, holding the needle in the 10-20 area on the economy gauge will give lowest fuel consumption. Use moderate engine revs, but don't drive below 55 km/h in 4th, 35 km/h in 3rd or 20 km/h in 2nd at vacuums which are in the Red area, as this will cause the engine to labour.

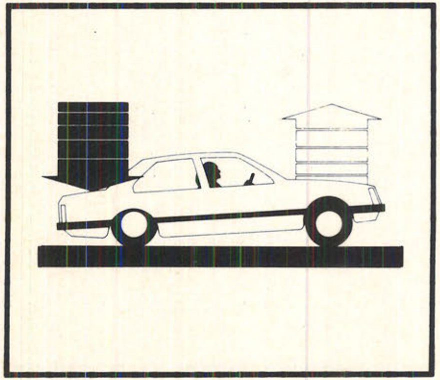


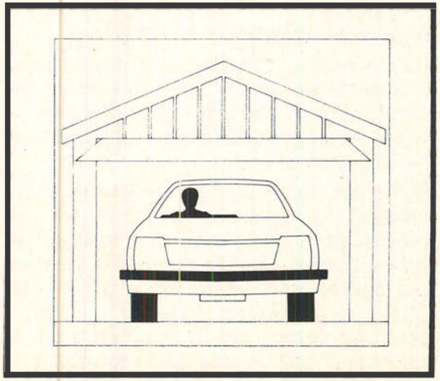
---

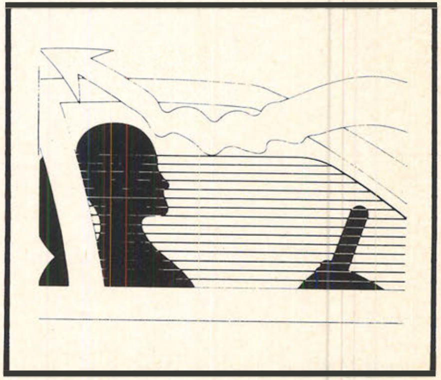
* where fitted.

In order to achieve optimum fuel economy, it is essential to maintain your car in peak mechanical condition. Observe the service schedule set out in this handbook, and have your car tuned regularly.

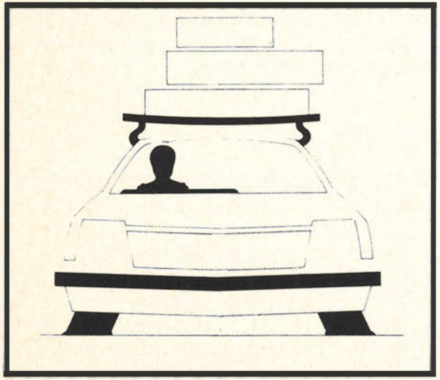
- Ensure that the engine is idling at the recommended speed—fast idling wastes fuel.
- Overloading the rear suspension upsets the aerodynamics of your vehicle by raising the front of the car. The resultant drag increase will contribute to increased fuel consumption.
- Faulty wheel alignment and underinflated tyres create rolling resistance and contribute to increased fuel consumption.
- Long warm-ups in the garage or drive-way are unnecessary and waste fuel. A car takes approximately five minutes to achieve its efficient operating temperature—and it does this most effectively on the road.
- Avoid full-throttle acceleration.
- Use the accelerator evenly—avoid sudden, jerky movements—they're certain fuel wasters.
- In the interests of efficient fuel consumption, it is desirable to achieve top gear operation as early as possible, but under no circumstances should you force the engine to labour in top gear.
- Driving with windows open affects the aerodynamics of the vehicle, increasing drag and contributing to poor fuel economy.

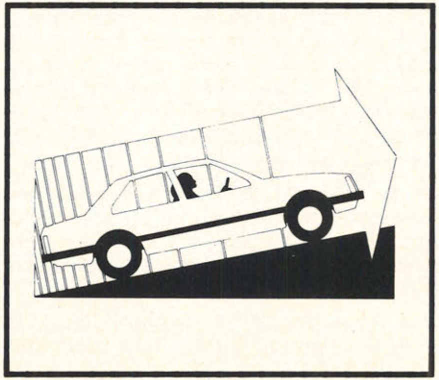


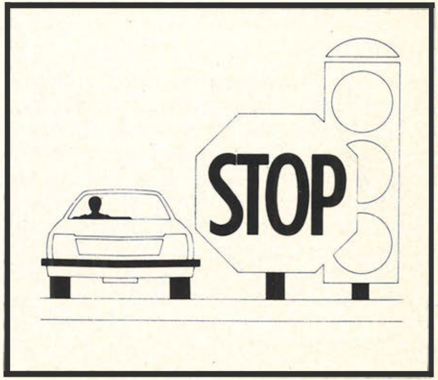




- When driving into a head wind, slow down—the air resistance at higher speeds means higher fuel consumption.
- When loading your car's roof rack try to keep the load as low as possible—thereby minimising wind drag which contributes to higher fuel consumption.
- Check that brakes are not dragging or binding (including parking brake).
- Efficient fuel ignition can only be achieved when spark plugs and distributor timing are in good condition and adjusted correctly.
- Do not drive with your foot resting on the clutch or brake pedal.
- When driving up a hill remember that the engine develops power most efficiently while the fuel economy indicator is in the open zone. AVOID driving in the RED zone and avoid accelerating up a hill.
- The shortest way to your destination may not be necessarily the most economical way. Pre-plan your trips, taking into account the location and number of stop signs and traffic lights. Select the route with the least number of obstructions to the traffic flow. It may not be the shortest way but it's probably the quickest—and you will save fuel.







Safe driving hints

Important

These items are listed as a safety reminder to you. Refer to the appropriate section of this handbook for a more detailed explanation.

Carbon monoxide

Avoid inhaling exhaust gases because they contain carbon monoxide, which is colourless and odourless. Carbon monoxide is a dangerous gas that can cause unconsciousness and is potentially lethal. (See page 19.)

Seat belts

Various road laws require the wearing of seat belts. It is important that the habit of using these should be developed by yourself and others in the vehicle. In the interest of safety seat belts should be checked regularly. Your Dealer will inspect and check the belts for you as part of the normal maintenance service. Never attempt to modify or change the seat belt away from the original specification as this will affect the operation of the belts and reduce their effectiveness, in preventing injury, in an accident.

Anti-theft ignition steering lock

DO NOT turn the ignition switch away from the ON position while the vehicle is in motion as this renders ineffective any power assisted equipment fitted to your vehicle.

Never remove the key while the vehicle is in motion as this will lock the steering of the vehicle.

Brakes

Driving through water may affect performance. Applying the brakes lightly will indicate whether they have been affected. To dry them quickly, lightly apply the brakes while maintaining a slow forward speed with an assured clear distance ahead until brake performance returns to normal.

Brake pedal travel should not be obstructed by ill-fitting floor mats or any other material under the pedal which causes interference with normal pedal movement.

Your seat should be positioned so that your feet can rest on the floor under the pedals.

Power assisted brakes

Power assisted brakes which are fitted to your vehicle utilise vacuum from the engine when it is running. Never let the vehicle run down steep grades without the engine running. **Never coast with the engine switched off.**

Loose articles

Do not leave a loose load or articles inside the passenger compartment. Stow articles in the luggage compartment or secure them.

Petrol fumes

Always stop the engine and do not smoke or allow open flames or sparks near the vehicle when refuelling. If petrol fumes are noticed while driving, the cause should be determined and corrected without delay.

Parking

When leaving your vehicle unattended:

1. Apply the parking brake. (Refer to page 45.)
2. Place transmission selector in:
   First or Reverse—(Manual Trans.).
   Park—(Automatic Trans.).
3. Turn key to LOCK position.
4. Remove key from ignition switch.
5. Close all windows and lock all doors.

Tyre traction

A decrease in driving, cornering, and braking traction occurs when water, snow, ice, gravel, or other material is on the road surface. Driving practices and vehicle speed should always be adjusted to the road conditions.

Cooling system (Radiator)

If the cooling system is hot, the coolant filler cap on the expansion bottle **must not** be removed quickly—it should be rotated slowly to permit the pressure to escape. Before doing this cover the cap with an old rag or cloth to avoid possible scalding. (See page 97.)

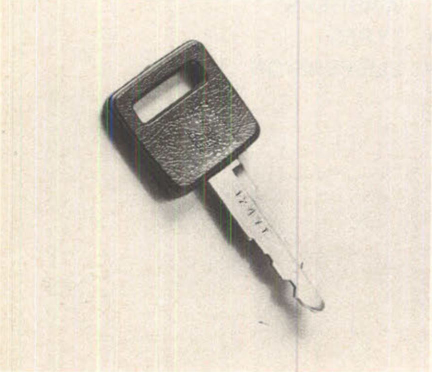
Maintenance for safety

The following items require regular attention in the interests of safety. If anything goes wrong with any one of them, an authorised GMH Dealer will help you.

- BRAKES.
- HORN.
- ALL LIGHTS.
- REAR VISION MIRRORS.
- SEAT BELTS.
- GLASS AREAS.
- EXHAUST SYSTEM.
- STEERING & WHEEL ALIGNMENT.
- WINDSHIELD WIPERS & WASHERS.
- TYRES.
- SUSPENSION.

Keys and locks

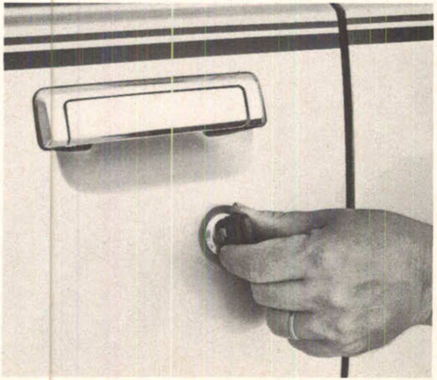
Your Camira is fitted with a dual key locking system, the master key operates all locks—ignition, doors, glove box, boot or tailgate and fuel cap and a service key operates ignition, doors, wagon tailgate and fuel cap locks only.



Opening doors

Both front doors can be unlocked with either key from the outside by turning the key to the front before lifting the handle to open the door.

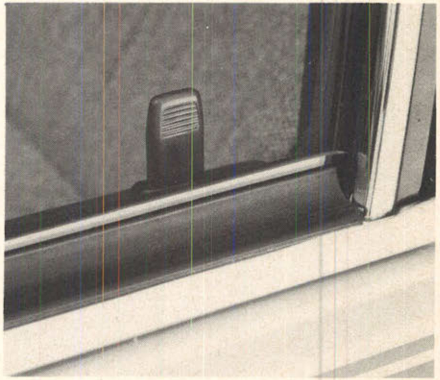
Note: Doors have a free-wheeling lock mechanism. This means that the doors cannot be opened from the outside except by using a key or inside unless the locking button is raised.



Locking doors

Inside—To lock, push down the locking button in the window ledge. To unlock lift the button.

Outside—With the door open, push down the inside locking button then shut the door. Do not slam the door or push on the window areas.

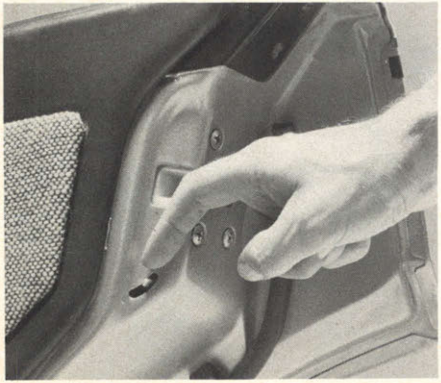


Rear 'child proof' door lock

This lock is incorporated in both rear doors. To operate it push the lever **down** as far as it will go and close the door. The door cannot now be opened from inside regardless of the locking button position. To disengage, open the door from outside and push the lever **up** as far as it will go.

CAUTION: For safety, you should check that the lock is operating correctly, after setting, by attempting to open the door from the inside of the vehicle.

Revised 5/83



A hint

Door locks may ice up in cold weather. If this happens, warm the key before you insert it. You may have to do this several times. In severe conditions use a commercially available de-icing spray pack or glycerine.

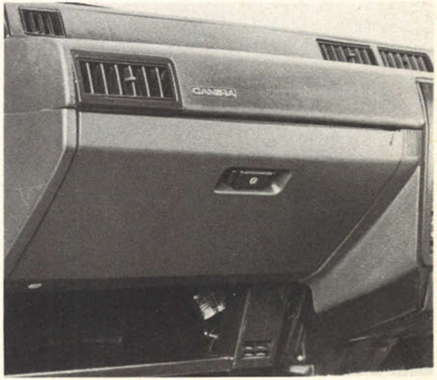
The key code number is stamped on the BODY OF THE KEY. Before placing the key on your key ring record the code number and place it in a safe place so that if the key is lost duplicates can be ordered from any GMH Dealer by quoting the key code number.

Glove compartment

To lock, insert the master key, rotate clockwise one half of a turn and then withdraw.

To unlock, insert the key and rotate anti-clockwise one half of a turn. To open, squeeze the two slides of the catch and pull towards you. To close, push lid firmly back into place. This will engage the catch.

On the SL/E model a hinged vanity mirror is located inside the glove box.



Door windows

All door windows are lowered or raised by using the low profile winders which are fitted with safety designed PVC knobs.

Fuel filler cap lock (where fitted)

Lock or unlock with either key.

Sedan luggage compartment

To unlock, turn the master key clockwise. The lid opens automatically. The compartment locks automatically when pushed shut.

Electromagnetic luggage compartment lock release

(where fitted)

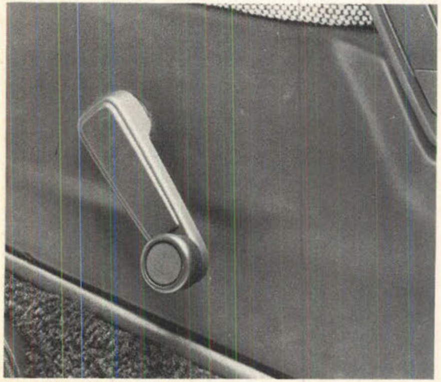
In addition to the mechanical lock release, the sedan luggage compartment lid may be provided with an electromagnetic release system.

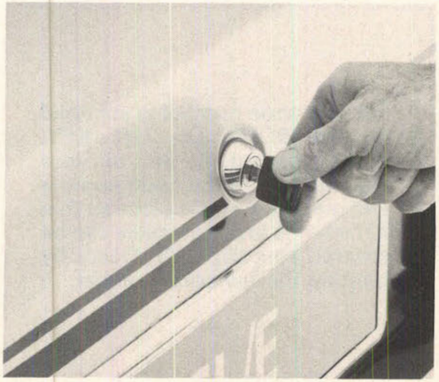
The lock may be released by depressing the push button switch located inside the glove compartment.

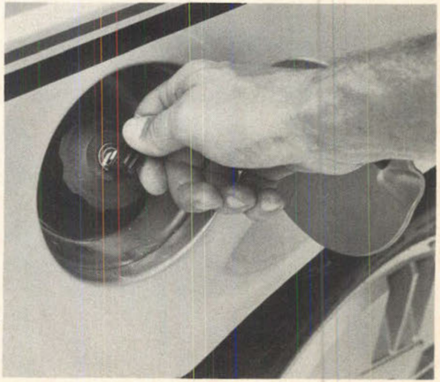
Wagon rear door

To open the rear door insert either key and turn. Remove the key and lift the lever (below the lock) to open. Gas struts will automatically lift the gate to the fully open position. The door should be re-locked when it is closed again.

CAUTION: To prevent entry of dangerous exhaust fumes into the passenger compartment, the boot should be closed during vehicle operation. However, if it is necessary to leave the lid open while transporting bulky cargo, all windows must be closed to avoid vacuum build-up. Open fresh air heater vents and switch, if necessary, to a higher blower speed.







Rear vision mirrors

Inside mirror

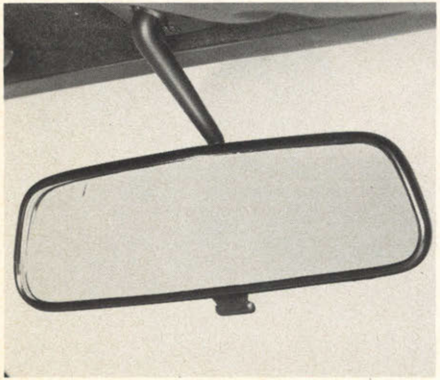
This is shatter-resistant, and mounted in such a way that it can be knocked out in case of accident to reduce the risk of injury.

Anti-glare type

(where fitted)

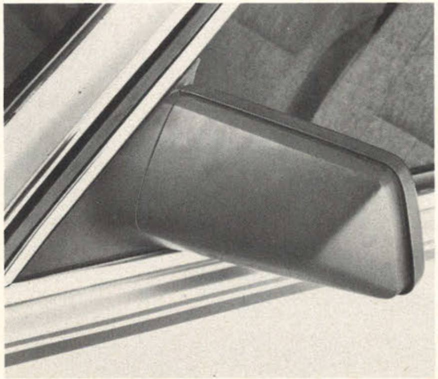
Where the anti-glare mirror is fitted, a control lever on the lower edge of the mirror enables an anti-glare reflector to be used during night driving. This reduces headlamp glare from following vehicles.

During normal daylight operation, the lever should be set forward away from the driver. To reduce glare at night, move the lever backwards towards driver.



Outside mirror

These mirrors must be adjusted for vertical and horizontal positions so that the driver when seated in the normal driving position can observe the following traffic. This mirror is hinged on the fold line to allow it to be knocked without causing injury to pedestrians.



Remote control type

(where fitted)

The angle of these mirrors can be controlled by moving the stalk located on the inside of the door. The change of angle of the mirror is in the same direction as the control movement. When selecting the most suitable angle for the mirror, ensure that the driver's head is in the normal position for driving then adjust the mirror angle to suit.

Seat adjustment

Front seat forward and backward setting

Raise the lever at the side of the seat then slide the seat to the desired position. Release the lever. Try to move the seat back and forth to check that the catch is fully engaged. Do not adjust seat fore and aft when the vehicle is moving. Where a drivers seat height adjuster is fitted the fore and aft lever is relocated at the lower front edge of the seat.

Head-restraint (non-adjustable)

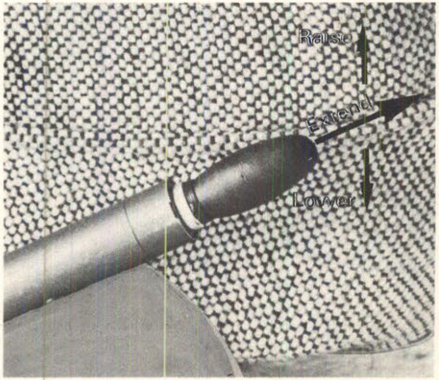
This safety feature is not intended to be used as a headrest. It is solely for the reduction of possible injury that may result from a whip-lash neck movement following a vehicle collision.

CAUTION: To avoid reducing the effectiveness of seat belts it is recommended that reclining seats be used in no more than a semi-reclined position when the vehicle is moving. The fully reclined position should be used only when the vehicle is stationary.

Seat height adjustment

(Where fitted)

The driver's seat height is adjustable by extending the telescopic lever on the seat outer side and then moving it as indicated in the illustration—when the seat height adjuster is fitted the fore and aft lever is located at the lower front edge of the seat.



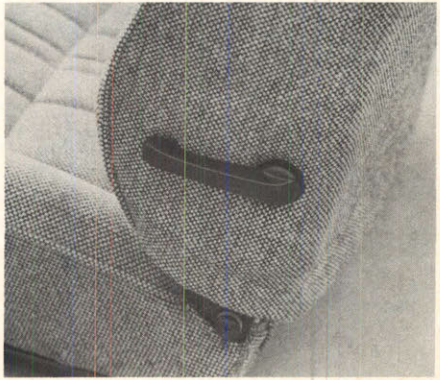
Reclining seat back control

The reclining seat back is controlled by a large toothed wheel at the bottom of the outer side of the seat. By turning the wheel, the reclining position of the seat can be changed through a large angle. The seat back will move in the same direction as the top of the wheel is rotated.

Lumbar support adjustment

(where fitted)

The drivers seat lumbar support is adjusted by moving the lever situated on the inner (passenger's) side of the seat back.



Wagon fold down rear seat

Caution: When converting the rear seat always avoid standing on the drivers side if the vehicle is parked at the kerb.

The back of the rear seat is split into two sections for your convenience. This allows passengers and long loads to be carried simultaneously.

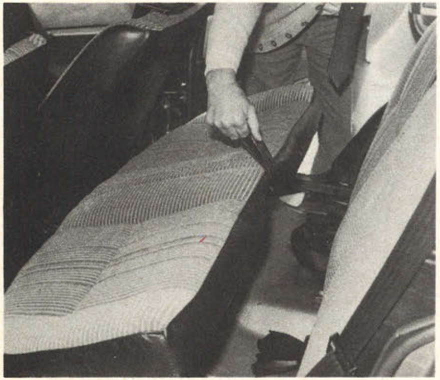
Partial conversion
For partial conversion depress the button on the top of the seat back of the portion to be converted. Then fold forward.

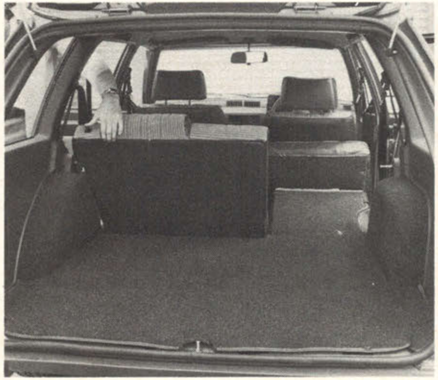
To convert fully.
Step 1. Pull the tag which is at the rear centre of the seat to release the catch and raise the seat to an upright position.

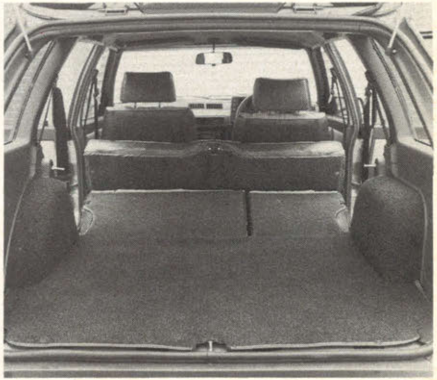
Step 2. Unlock the catches on the left and right hand tops of the two seat backs by depressing the buttons.

Step 3. Fold both sections of the seat back forward.

To reconvert reverse the above procedure making sure the seat belts are in their correct position and are not twisted or obstructed.







Seat belts

Study this section carefully. It is important that you understand how to correctly wear a seat belt. You should also ensure that all occupants wear a properly adjusted seat belt whenever the vehicle is moving.

Retractor belts

To put on a retractor seat belt, pull the metal tongue across your body and clip it into the buckle. When the metal tongue has locked safely into place you will hear a "click". After fastening, settle the belt by running your hand under the belt starting at the hip, go across to the buckle, then up under the sash. Any extra belt length will retract automatically.

The lap section should be worn **as low as possible on your hips,** not on your waist. Make sure the sash and lap sections of the seat belt are free from twists and are fitting firmly.

The emergency locking retractor belt allows you to move freely while the vehicle is travelling normally. The belt will lock immediately on fast braking, impact with a solid object or any quick movement by the wearer.

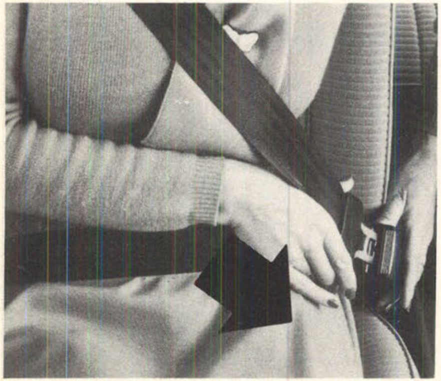
To release the belt, press the release button on the buckle and allow the belt to retract. Check that it fully retracts without twisting or turning.

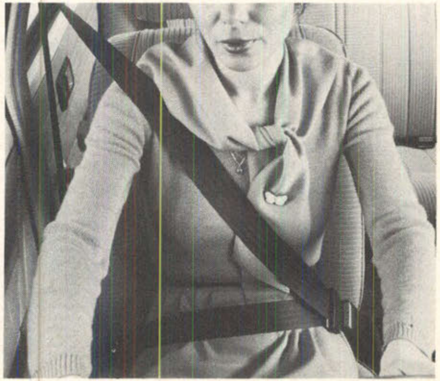
Lap-type belts

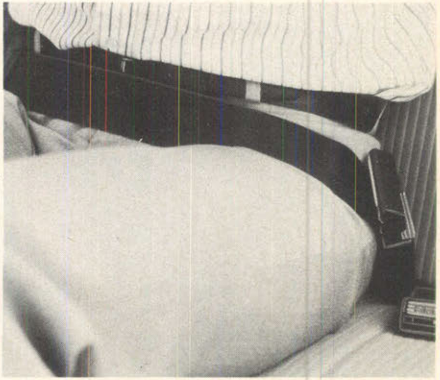
To adjust: Settle yourself comfortably. Bring the tongue adjuster across your body and clip it into the buckle. When the metal tongue has locked safely into place you will hear a "click". Make sure the belt is fitting firmly across the lower hip area and not across your waist.

To shorten: Tilt the tongue adjuster and pull the belt through the belt adjuster.

To lengthen: Tilt the tongue adjuster and pull the belt from just below the finger grip bar.







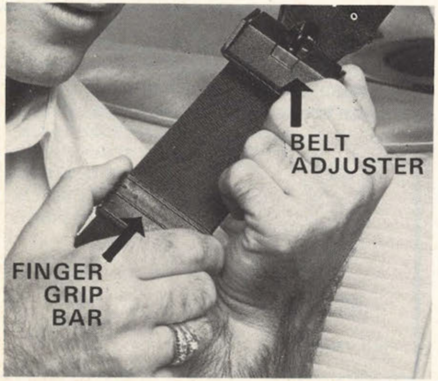
Non-retractor lap/sash belts

The lap section should be worn **as low as possible on your hips,** not on your waist. Make sure the sash and lap sections of the seat belt are free from twists and are fitting firmly.

To adjust: Settle yourself comfortably. Bring the tongue adjuster across your body and clip into the buckle. When the tongue has locked safely into place you will hear a "click".

To lengthen: Tilt the belt adjuster and pull the belt from just below the finger grip bar.

To shorten: Tilt the belt adjuster and use the finger grip bar to pull the belt through the belt adjuster.



Safety hints

Check seat belts regularly. Your GMH Dealer will do this as part of normal maintenance.

Adjust seat belts firmly. A loose belt is no help at all.

Seat belts must be replaced if they have been in use during a severe impact—even if there's no obvious damage.

Don't wear a belt with twisted straps.

Don't ever put a seat belt around a child being nursed on the lap.

Care of seat belts

Clean belts only with a solution of mild soap and lukewarm water. Never use bleach. Replace the belts if they become frayed or damaged.

AUSTRALIAN DESIGN RULES:

WARNINGS

Seat belts are designed to bear upon the bony structure of the body, and should be worn low across the front of the pelvis, or the pelvis, chest and shoulders, as applicable; wearing the lap section of the belt across the abdominal area must be avoided.

Seat belts should be adjusted as firmly as possible, consistent with comfort, to provide the protection for which they have been designed. A slack belt will greatly reduce the protection afforded to the wearer.

Care should be taken to avoid contamination of the webbing with polishes, oils and chemicals, and particularly battery acid. Cleaning may safely be carried out using mild soap and water. The belt should be replaced if webbing becomes frayed, contaminated or damaged.

It is essential to replace the entire assembly after it has been worn in a severe impact even if damage to the assembly is not obvious.

Belts should not be worn with straps twisted.

Each seat belt assembly must only be used by one occupant; it is dangerous to put a belt around a child being carried on the occupant's lap.

No modifications or additions should be made by the user which will either prevent the seat belt adjusting devices from operating to remove slack, or prevent the seat belt assembly from being adjusted to remove slack.

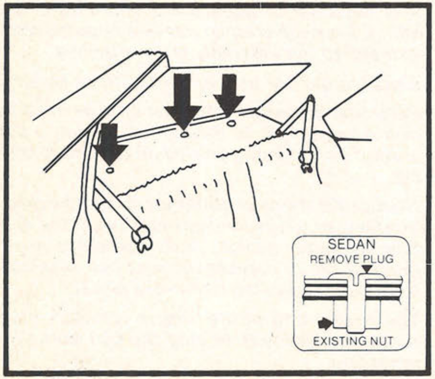
The positioning of the tongue restrictor must never interfere with or stop the belt from fully retracting.

Infant and child restraints

Your Camira is provided with anchorage points for child restraints — (see diagram) — and your GMH Dealer will be more than happy to advise you about the various types of child restraints available.

Children should be belted in at all times.

In some States children must be belted in whenever they are travelling in a vehicle in which seat belts are installed.



Anchorage points are located on the rear parcel shelf (sedan) or load compartment floor and roof (wagon). Consult your GMH Dealer for correct installation procedure.

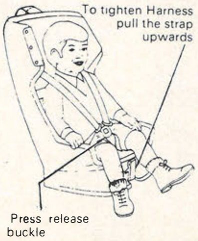
CHILDREN ABLE TO SIT UP should be restrained with the regular seat belt or an approved child restraint. NEVER allow a child to stand or kneel on any seat.

Where children are carried without a child restraint if the seating position of the child is to be raised this is to be done only by means of a support which is retained by the seat belt. ON NO ACCOUNT SHOULD A LOOSE CUSHION BE USED THIS COULD ALLOW SERIOUS INJURY IN THE CASE OF VEHICLE COLLISION.

INFANTS UNABLE TO SIT BY THEMSELVES should be carried in a padded, covered bassinet placed **across** the back seat. Strap this in tightly with the regular seat belts.

WARNING: Child restraint anchorages are designed to withstand only those loads imposed by correctly fitted child restraints. Under no circumstances are they to be used for adult seat belts or harnesses.

The GM Child Love Seat is designed for children weighing 9 to 19 kg, up to 1 metre in height, who are unable to sit up alone. A feature of this seat is the inclusion of a recliner bar enabling the seat to be elevated or reclined to suit your childs needs. Ask your Dealer about the GM Love Seat cover.


To tighten Harness pull the strap upwards
Press release buckle

Section 2

Starting and operating

EXHAUST GAS WARNING

Carbon monoxide poisoning

Exhaust gases contain carbon monoxide which can cause unconsciousness and even death to both humans and animals.

You could inhale the gases if the exhaust system on your vehicle is faulty.

Have the vehicle checked thoroughly each time it is serviced. If you notice a change in exhaust noise, or if the back or underbody of your vehicle is damaged, take it to your GMH Dealer for inspection.

Danger

Don't ever sit in a parked vehicle with the engine running for any length of time. And don't leave the children or your pets in there either.

Don't run the engine in the garage any longer than necessary to move the vehicle.

If you must travel with the boot open, close all windows, fully open the ventilation system, turn ventilation fan control to maximum setting and do not exceed 50 km/h unless necessary.

Exhaust pollution

Your Camira is equipped with several features designed to minimise exhaust pollution.

Steering column controls

Ignition lock

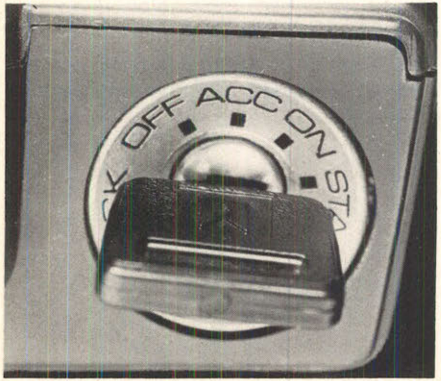
This is an anti-theft lock and is on the right side of the steering column. It has five positions.

LOCK: The key can be inserted or removed only when the switch is in this position. This is the normal parking position, and locks the ignition and the steering wheel when the key is removed.

OFF: Permits turning the engine off without locking the steering wheel.

ACC: This allows you to use the electrical components—lighter, radio, etc.—when the engine is not running.

To reduce battery discharge, switch off all non essential components.



ON: Normal operating position. The ignition circuit and the electrically operated instruments are energised.

Start: This starts the engine. The key will return to **On** when released.

CAUTION: Do not turn the ignition switch away from the "ON" position while the vehicle is in motion as this renders all power assisted equipment ineffective.

Never remove the key whilst the vehicle is in motion as this will lock the steering.

Steering wheel

Avoid turning the steering wheel while the vehicle is stationary. NEVER move the vehicle with the steering locked, or damage to the steering assembly will result.

NOTE: If the steering lock is difficult to disengage when the vehicle has been parked with the tyres hard up against the kerb or with the steering wheel off-centre it may be necessary to slightly rotate the steering wheel to free up the ignition steering lock.

Parking

When leaving your vehicle unattended:

1. Apply the parking brake.
2. Place transmission selector in
   Reverse or First gear—(Manual Trans.)
   Park—(Automatic Trans.).
3. Turn key to LOCK position.
4. Remove key from ignition.
5. Close all windows and lock all doors.

Combination switches

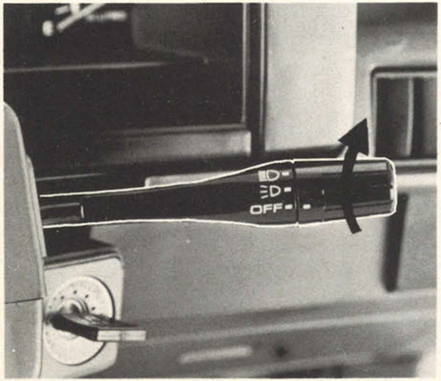
(Right side of column)

This controls the light switch, turn signal switch, dimmer switch and passing light switch.

Light switch

To turn on the parking lights, tail lights, licence plate lights, and instrument panel lights, turn the switch knob to the first stop.

To turn on the headlights and other lights, turn the switch knob to the next stop.



Headlamp dipping

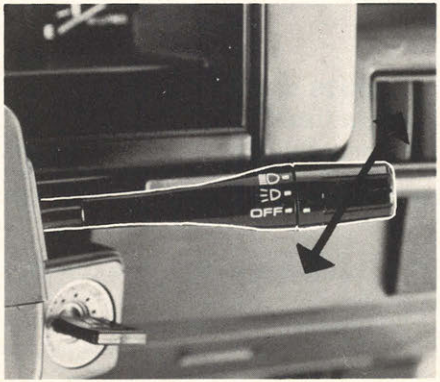
The headlight beam is alternately switched from low to high or high to low each time the switch lever is moved towards the steering wheel and released.

The headlight high beam indicator on the instrument panel lights up, when the headlights are on high beam.

Passing light switch

The headlight high beam turns on and goes out each time the switch lever is moved towards steering wheel and released with the light switch in either "OFF" or "1st" position.

To give a signal of overtaking operate the lever repeatedly so that the headlights are made to flash in daytime and alternately switch from low to high beams at night.



Turn signals

Move the switch lever in direction of a turn being made so that the external turn signal lights operate causing turn signal indicator light on the instrument panel to flash. The switch lever returns automatically to neutral position when steering wheel is returned to straight ahead position.

If the turn signal lights don't flash or if you can't hear the indicator clicking, or if they start to flash slower or faster than usual—have them checked by your GMH Dealer right away.

Variation in flash rate occurs when a bulb has failed, and this means your signals are not operating.

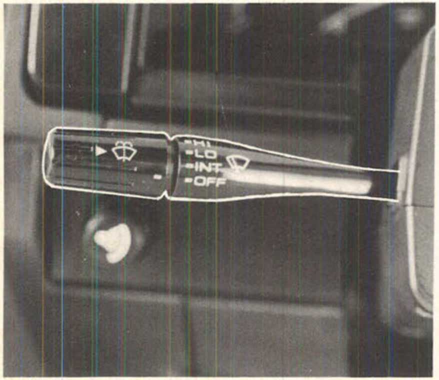
Windshield wipers and washers (Left side of column)

The combination stalk on the left or passenger side of the steering column operates the wipers and washers when the ignition switch is on ON or ACC.

Wiper operation—The windshield wipers are operated by turning the end of the stalk clockwise from the OFF position.

The switch has two positions on SL and three positions on SLX and SLE to control the wipers:
INT—for single sweep; (SLX and SLE only)
LO—for slow wiper speed;
HI—for fast wiper speed.

To stop the wipers, turn the stalk back to the OFF position. INT position operates the wipers for a single sweep only. From the OFF position turn the stalk to the INT position. The wipers will sweep once across the windscreen and return to their rest position repeating this cycle every several seconds.



Do not operate the wipers if the windshield is dry. They may scratch the windshield glass. Do not operate wipers if they are caked with snow or frozen as this may damage the wiper system.

Washer operation—By depressing the button on the end of the stalk the electric washer pump is activated, spraying jets of fluid onto the area swept by the wiper blades, and will only continue while the button is depressed.

If the windshield wipers are not in operation at the time, depressing the button on the stalk will automatically start them operating on slow speed and keep the wipers operating until turned off.

Tailgate washer/wiper
(where fitted)

The switches for these systems are located on the left side of instrument panel. To actuate each operation depress the relevant switch.

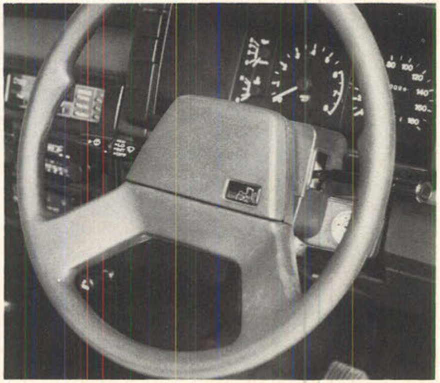
Windshield and tailgate washer tanks

The tanks should be filled only with plain water or with AC Delco Optikleen washer solution (Part No. M37068) mixture.

Windshield washer tank is located in the engine compartment. Tailgate washer tank is located in the right hand rear quarter panel of wagon models. (Where fitted.)

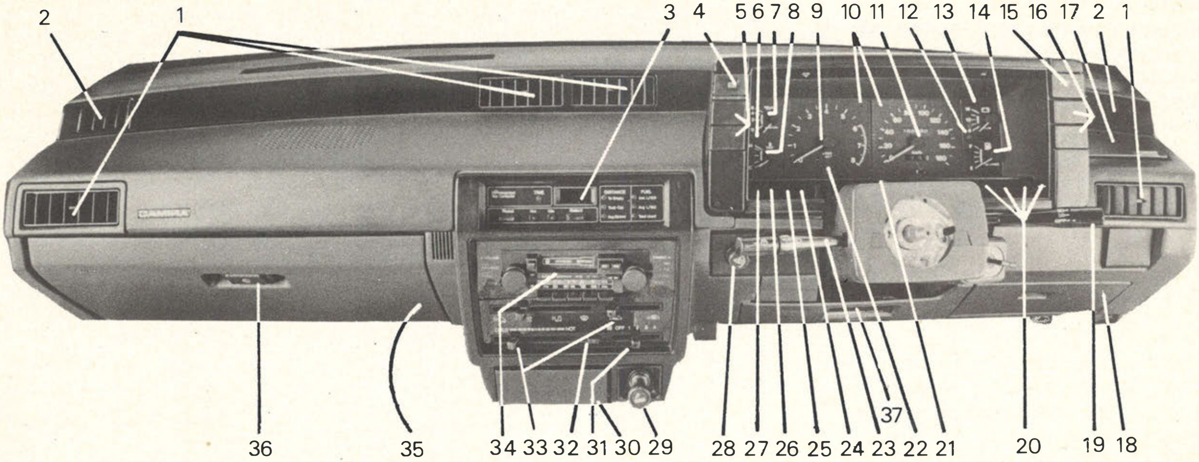
Horn

The horn is operated by pressing down on the pad located at the centre of the steering wheel. The horn does not require insertion of the ignition key to operate.



Instrument panel controls and dials

This page details all available instruments and control options. Some features may not be fitted to your vehicle.



1. Vents.
2. Side window vents.
3. Digital clock*/trip computer*/oddment box*
4. Rear window demister switch.
5. Rear wiper switch*.
   Rear washer switch*. } (s/wag.)
6. Oil pressure warning light.
7. Oil pressure gauge*.
8. Temperature gauge.
9. Economy gauge*/tachometer*.
10. Turn signal indicators.
11. Speedometer (incl. odometer and trip meter).
12. Generator warning light.
13. Voltmeter*.
14. Fuel gauge.
15. Power antenna switch*.
16. Dummy switches.
17. Coin box*.
18. Fuse box.
19. Light and turn signal switch.
20. Spare warning lights.
21. Hazard warning switch.
22. High beam indicator light.
23. W/shield wiper and washer switch.
24. Spare warning light.
25. Door ajar warning light*.
26. Brake fail warning light.
27. Park brake warning light.
28. Illumination control.
29. Cigarette lighter.
30. Ash tray.
31. Fan switch.
32. A/c control.*
33 Ventilation and heater controls.
34. Radio/radio cassette*.
35. Remote luggage compartment release* (sedan) (inside glove box).
36. Glove box.
37. R.H. lap cooler outlet.

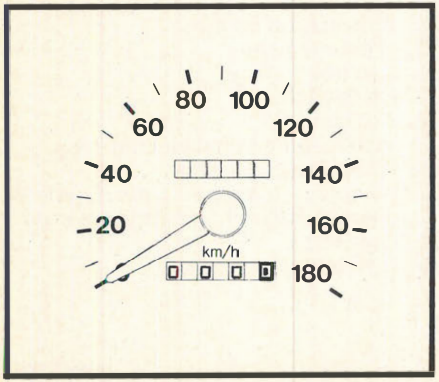
*where fitted

Instruments and dials

Speedometer, odometer and tripmeter

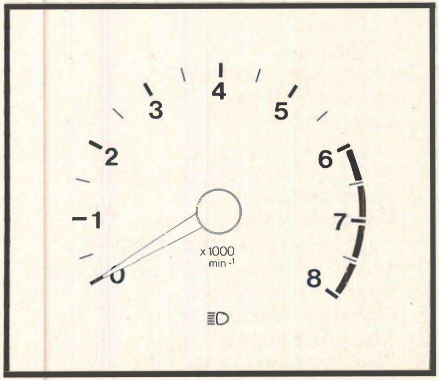
The speedometer face incorporates the odometer numerals to show the distance travelled in kilometres. The speedometer is calibrated from 0 to 180 kilometres per hour (km/h).

A tripmeter, which is reset to zero by the push button, records the distance covered on a particular trip (up to 999.9 km).



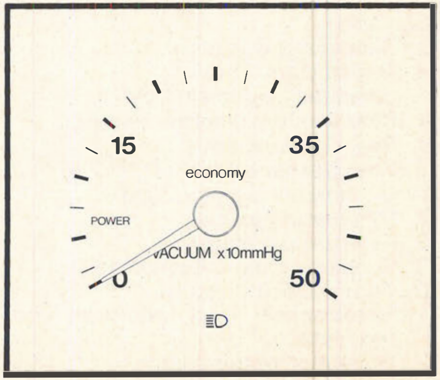
Tachometer
(where fitted)

The tachometer is graduated from 0-8 indicating engine revolutions in thousands per minute (rpm). The section from 6-8 is indicated in RED and continued or sustained operation in this section could cause serious engine damage.



Fuel economy indicator
(where fitted)

By monitoring the intake manifold vacuum, this gauge gives a reading which indicates how hard the engine is working. The RED marks area indicate high fuel consumption. You should avoid driving with the needle in this RED area for prolonged periods if you wish to obtain optimum fuel consumption from your vehicle. The position of the needle can be controlled by your driving habits. (Refer pages 4 to 7.)



Oil pressure gauge

(where fitted)

The oil pressure gauge indicates the relative operating pressure within the engine lubricating system.

Should the gauge fail to indicate a reading or if the needle moves towards the bottom of the gauge when the engine is running above idle speed, it should be stopped and the reason for the loss of oil pressure found and corrective action taken.

Temperature gauge

The gauge is calibrated to indicate the relative operating temperature of the cooling system. If the needle reaches the red section, (indicating high temperature) the engine should be stopped and allowed to cool down before attempting to locate the cause of the problem. (Refer page 52 for overheating instructions.) Check that there are no visible coolant leaks from the system and the electric cooling fan is operating.

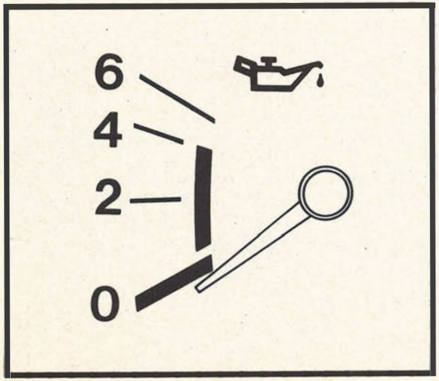
Voltmeter

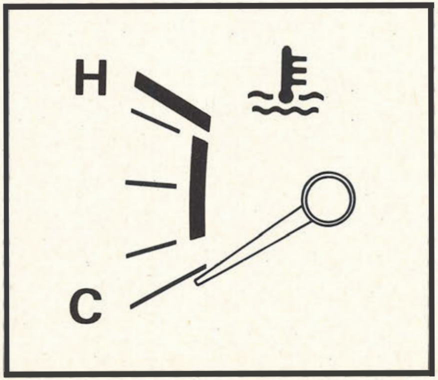
(where fitted)

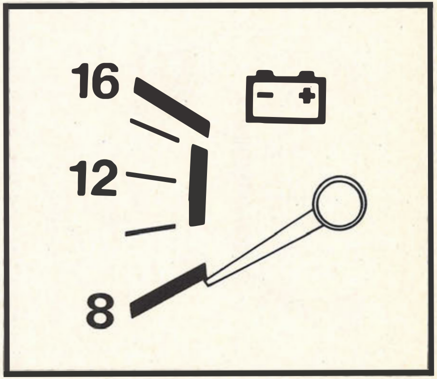
The voltmeter indicates the condition of the electrical charging system. Normally the needle will remain in the white band area of the dial.

Needle movement to the lower zone indicates a low voltage condition. Needle movement to the upper zone indicates a high voltage condition.

In either of these cases, the electrical charging system will require checking to establish the cause, items such as the battery, voltage regulator, drive belt or wiring and connections could be affected. A generator charge indicator light is incorporated in the dial face. The light is off when the generator is charging.



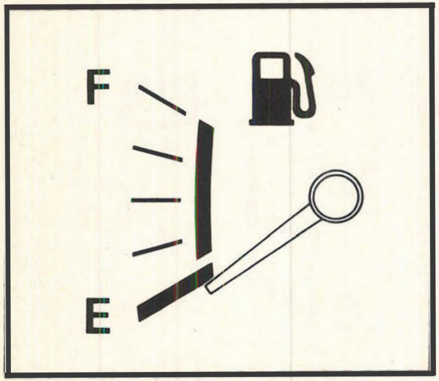




Fuel gauge

This gauge is electrically operated to indicate the proportionate amount of fuel contained in the fuel tank. The gauge is activated when the ignition switch is turned to the ON position.

The fuel tank holds approximately 60 litres.



Digital clock
(where fitted)

The clock is electrically energised and time is displayed when the ignition is turned on.

To reset the time, move the 'lock' switch to the 'off' position and push the hrs. or min. button as necessary.

Return the lock switch to the on position when adjusted to avoid accidental resetting.

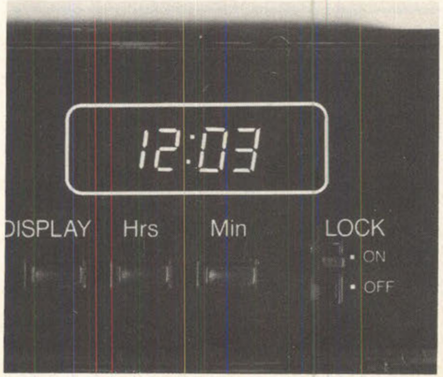
The function of each switch is as follows:

'Display'
Display switch is pushed to display time with the ignition switched off. The display goes out when display switch is released.

'Hrs'
Hour indicator is advanced one hour each time this switch is pushed.

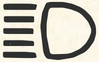
'Min'
Minute indication is advanced one minute each time this switch is pushed. The clock can be accurately set since the next minute will not display until 60 seconds after releasing the "M" switch.

'Lock'
With lock switch in 'on' position, hrs and min. buttons are inoperative.



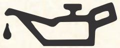
Indicator and warning lights

High beam



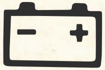
When the headlamps are on high beam a blue symbol located on the instrument panel will glow.

Oil pressure



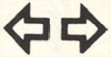
A red rectangle below the white symbol will glow when the ignition switch is turned to the ON position. After the engine has been started the light will go out and remain out. If the light should glow after the engine is running above idle, stop the engine and the reason for the loss of oil pressure should be located and corrective action taken.

Generator



A red rectangle below the white symbol will glow when the ignition switch is turned to the ON position. After the engine has been started, the light will go out and remain out. If the light should glow after the engine is running, the fault causing the problem should be located and corrective action taken.

Turn signal



There are two green arrow-head turn signal indicators. They are located at the top centre of the instrument panel. The appropriate indicator will flash in the direction signalled.

Hazard warning flashers

The two green arrow-head turn signal indicators on the instrument panel will flash continuously whilst the rocker switch located on the top of the steering column is on.

Parking brake warning

PARK
BRAKE

When the parking brake is applied with the ignition switch in the ON position the red sign will glow until the parking brake is fully released.

Brake failure warning

BRAKE

This light glows red when ignition switch is turned to the start position. This indicates the electrical circuit is functioning. When the engine is started the light will go out. If the red sign glows at any other time, it will indicate that there may be something wrong with the braking system. Immediately the indicator light glows, under these conditions, stop on the side of the road as carefully as possible. Do not proceed until satisfied that cautious progress is possible or that the cause of the problem has been located and rectified.

(Reference should be made to brake operations on page 45.)

Door ajar warning
(where fitted)

The red sign will glow if any door is not properly closed and the ignition switch is in the ON position.

Switches for accessories

Courtesy/dome light

When opening any door the courtesy light is automatically switched on. This can be cancelled out by shifting the switch lever on the light to OFF. The light may be illuminated at any time by switching the lever to ON.

Luggage compartment light (where fitted) sedan only

The luggage compartment light will come on when opening the lid—independent of exterior lights.

Glove box light

(where fitted)

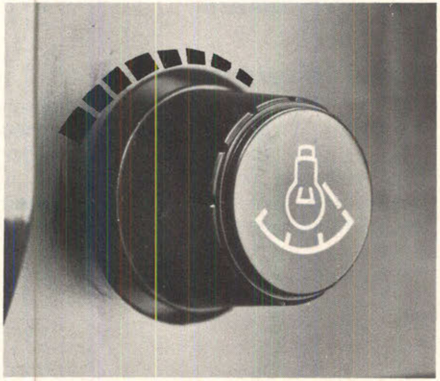
When the glove box is opened the light will come on.

Back-up lights

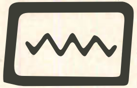
The two back-up lights provide general illumination behind the vehicle when shift lever is placed in reverse and ignition is turned on. They provide a visible signal to other drivers and pedestrians that the vehicle is operating or about to be operated in reverse gear.

Instrument lighting control

The brightness of the instrument lighting may be controlled by rotating the dimmer control situated on the instrument panel to the left of the steering column.



Heater rear window switch



The electrically heated rear window is switched on with the push switch shown in illustration on page 23 and only works when the ignition switch is in the "ON" position. A magenta coloured indicator lights up below the switch as soon as the switch is in operation. The symbol illumination comes on together with the exterior vehicle lighting.

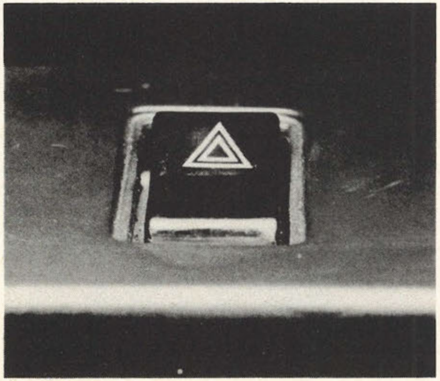
To avoid overloading the electrical system it should only remain in operation until the rear window is clear. When cleaning the rear window observe the hints given under "Care of the interior". (Page 87.)

Hazard warning switch

When the switch is on, all four turn indicator lights flash continuously, and all turn indicators will flash.

The hazard warning flasher switch is to be used ONLY when your vehicle has become a traffic hazard.

USE OF THE HAZARD WARNING SYSTEM WHILE THE VEHICLE IS MOVING IS PROHIBITED BY LAW IN SOME STATES.

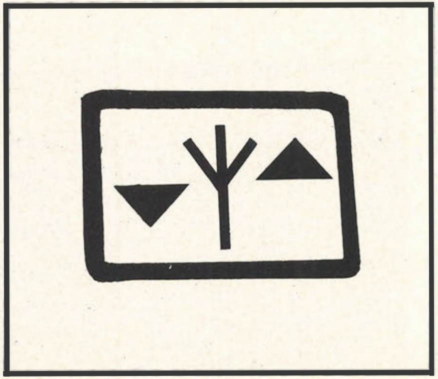


Radio power antenna

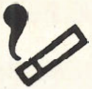
(where fitted)

The power antenna will extend automatically to car roof height after a slight delay after the IGN. SWITCH is turned to ON or ACC.

The antenna can then be further extended or retracted manually by depressing the instrument panel switch in the desired direction. When the ignition switch is turned to OFF or LOCK the power antenna will retract automatically after a delay of 10 to 15 seconds.



Cigarette lighter



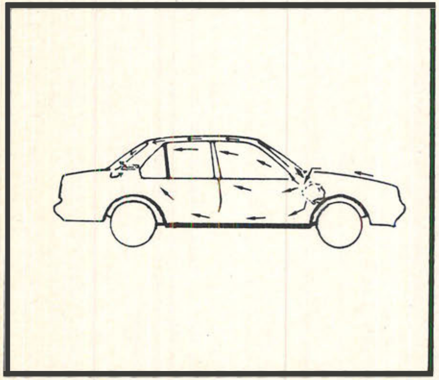
The cigarette lighter is activated only when the ignition switch is in the ON or ACC positions. To operate, simply press in the lighter knob. It will stay in until the element is hot at which time the lighter will automatically pop back to its original position ready for use.

Ventilation system

Your Camira has a flow-through ventilation system for your comfort. Under reasonable conditions, it shouldn't be necessary to open the windows at any time.

Fresh air comes into the vehicle through the grille in front of the windshield, and into the passenger area through vents in the instrument panel.

NOTE: The ventilation system will not work if the engine hood grille is allowed to become covered or clogged up with leaves, snow, etc. Keep it clean and uncluttered.



Dusty road driving

When driving in dusty conditions wind all windows up and turn ventilation fan onto full. Do not follow in the dust cloud of other vehicles.

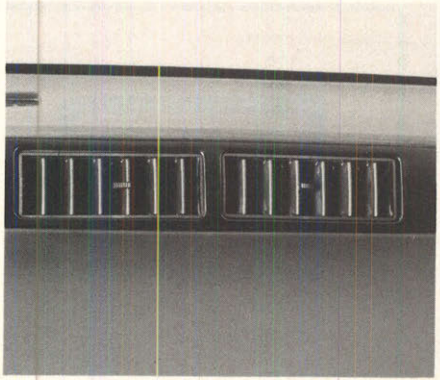
Instrument panel vents

These are located in the middle and at each end of the instrument panel.

Air can be directed into the vehicle via the four vents.

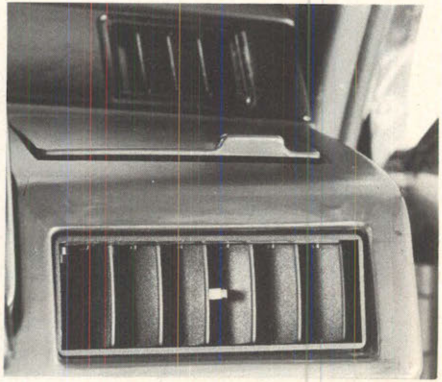
Door window vents

There are two door window demist vents, located at the upper ends of the instrument panel. These are fixed non-adjustable and operate only when the mode lever is on defrost.



Lap vent

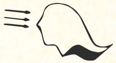
A lap vent is located on the lower section of the instrument panel directly below the steering column. The direction of the air is controlled by a rotary vent and below this vent by a deflector door.



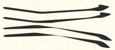
The controls

Distribution control lever (top left lever)

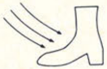
This has four positions:



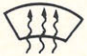
In this position air is directed mainly to the face and upper level.



This position directs the air to both the upper level (face) and the floor.

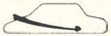


In this position the main air is directed to the floor with a small amount going to the face.



In this position the air flows mainly onto the windscreen. A small amount goes to the floor outlets.

Air source lever (top right lever)



This allows you to select outside air or recirculated (inside) air.

Heat control lever (lower left lever)

This allows you to select the temperature you desire.

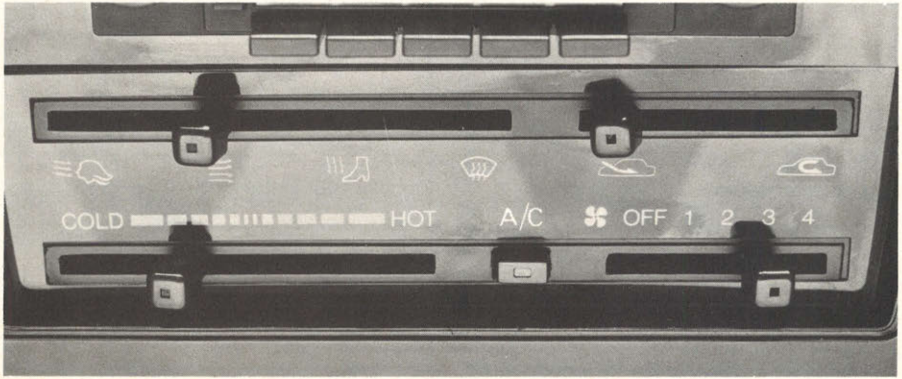
Fan control lever (lower right lever)

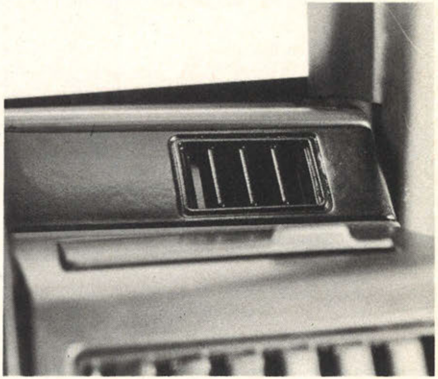
The fan control lever has five positions OFF, 1, 2, 3, 4, for controlling fan speed in steps, thereby controlling the volume of incoming air. Use the fan to boost air flow whenever you consider it necessary.

Air conditioning switch

(where fitted)

Push the button marked A/C in and move fan control lever to position 1 to operate the air conditioner.





Windshield and front door windows defrosting

Top left lever— (Defrost)

Top right lever— FRESH

Lower left lever—as desired—depending on the weather.

Fan—as desired—depending on the weather and volume of air required.

Heating

Top left lever— (BI LEVEL)

Top right lever—as desired.
Lower left lever—HOT
Fan—as desired.

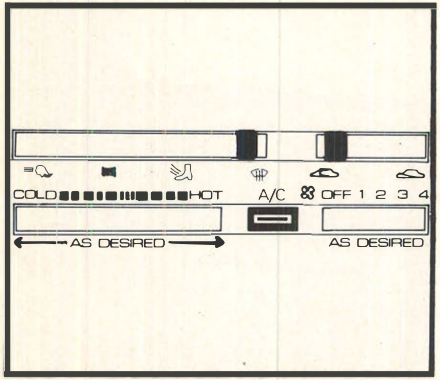
NOTE: When using BI LEVEL with the temperature lever in an intermediate position, warm air will be directed to the feet and slightly cooler air to the face.

Ventilating

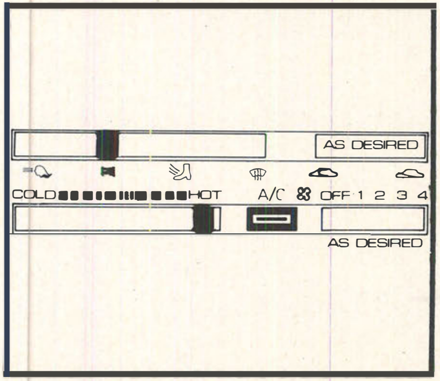
Top left lever—as desired.
Top right lever— FRESH

Lower left lever—COLD
Fan—as desired.

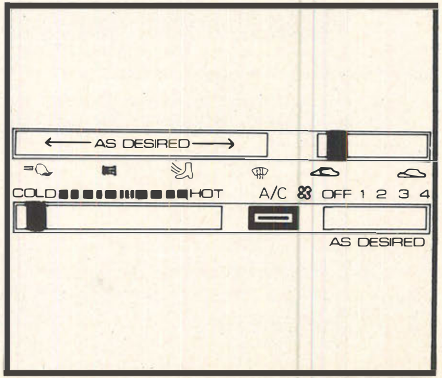
Windshield and front door windows defrosting


COLD
HOT
A/C
OFF 1 2 3 4
AS DESIRED
AS DESIRED

Heating


AS DESIRED
COLD
HOT
A/C
OFF 1 2 3 4
AS DESIRED

Ventilating


AS DESIRED
COLD
HOT
A/C
OFF 1 2 3 4
AS DESIRED

Door window defroster vents

If the distribution control lever is set in the position, cold or hot air (as selected) will be directed onto the front door windows.

Air conditioning (optional)

To operate the air conditioner push the A/c switch in, set the distribution control lever to the left, the air source lever to (recirculate); the temperature control lever to COLD and select position 1 on the fan switch. The air flow through the instrument panel vents can be boosted, if desired, by selecting a higher fan speed.

NOTE: Use (recirculate) for maximum air conditioning (i.e. quick cool down). Use outside air for normal air conditioning. The air conditioning will not operate unless the fan is operating.

NOTE: Every 7 to 10 days the air conditioning should be switched on and, with the air source lever in either the Norm or Recycle position and the blower fan switched to an operating speed, run the unit for a period of 5 to 10 minutes. This procedure should be carried out regularly during those periods of the year (e.g. winter) when the air conditioning system may not normally be utilized.

This procedure recirculates the oil within the compressor and lubricates compressor shaft seals. It will prevent the drying out of the seals with subsequent operating failure of the system.

AM Radio

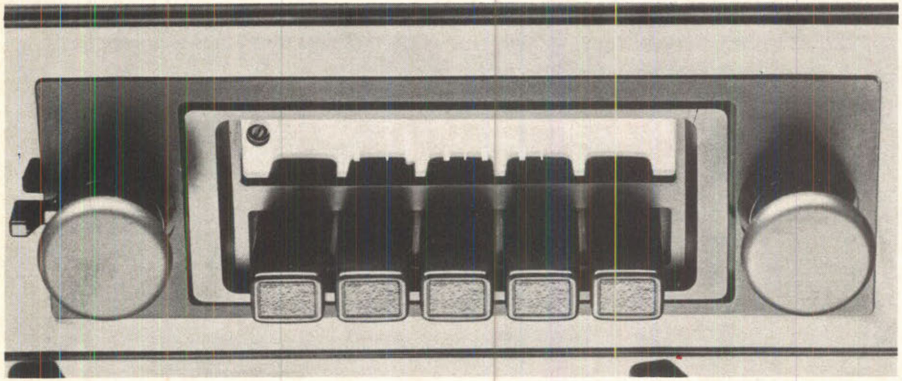
(where fitted)

Your radio has been especially made for GMH and when fitted as standard equipment is covered under the GMH New Vehicle Warranty.

Operating instructions

ON/OFF switch and VOLUME control: Push the volume control to switch the receiver ON; a second push will switch the receiver OFF. Turn the control to increase or decrease the volume.

Tone control: The tone control lever is located behind the ON/OFF knob. Turn the lever up for treble, and down for bass.



Manual tuning control: The receiver may be tuned at any time by means of the manual tuning control. This will not affect the ability of the push-button to recall preselected stations.

Push-buttons: The push-buttons enable you to tune the receiver to any of five preselected stations without the need to operate the manual tuning control.

Resetting push-buttons: You may alter the station to which any particular push-button is preset simply by resetting that push-button (see below). You may reset any or all of the push-buttons in this way as often as you like. Although you may reset the push-buttons in any order, it may be convenient to work along the push-buttons from left to right, preselecting your preferred five stations from left to right across the dial.

Alternatively, you may reset the push-buttons in order of your station preference so that your favourite station is selected by the first push-button, your next preference by the second push-button, and so on.

To reset the push-buttons to the required stations, proceed as follows:

1. Switch the receiver ON.
2. Set the VOLUME control to a higher than normal position.
3. Unlock the push-buttons (or push-button) by pulling firmly outwards.
4. Accurately tune the receiver to the required station with the manual tuning control.
   NOTE: Subsequent push-button tuning can only be as accurate as your initial setting up.
5. Lock push-button to the station by pushing in firmly.
6. Repeat steps 4 and 5 for each remaining station and push-button.

Tone control: Set the control to give the tone you find most satisfactory. When listening to speech, it may be found beneficial to increase the treble (turn control clockwise). Outside interference will be reduced by turning the control anti-clockwise.

Antenna operation

Lock down: If a lock down antenna is fitted, the outermost (largest diameter) section must be fully extended, the other sections may then be raised progressively for distant reception.

If it is desired to extend only the outermost section, it may be necessary first to fully extend all sections, then retract the inner sections.

Power antenna: If a power antenna is fitted, an instrument panel switch enables the antenna to be raised or lowered from the driver's position; for best reception all sections should be fully extended and then retracted as desired.

The power antenna is automatically raised to a position just below level with the vehicle roofline when the radio is first switched on. If the radio is already on when the ignition key is turned to the "IGN" or "ACC" positions the antenna will automatically raise.

The antenna automatically lowers to the fully retracted position when the radio control or ignition key is turned to the "OFF" position.

To preserve the finish and permit the telescopic sections to be moved up and down with ease, clean the antenna regularly with a damp cloth.

Antenna trimmer: The antenna trimmer situated in the top left hand corner of the tuning dial must be adjusted at conclusion of installation. Fully extend antenna. Tune receiver to weak station or noise near 1400 kHz (right hand side of dial). Adjust antenna trimmer by turning the trimmer clockwise or anti-clockwise for maximum volume.

AM/FM stereo radio and cassette tape player

(where fitted)

1. ON/OFF volume switch

Turn to the right (clockwise) to turn the radio on and to alter volume. Turning fully to the left (anti-clockwise), will turn the radio off.

2. Balance control

SL/E:

Pull out the ON/OFF switch to balance the stereo effect on the left and right speakers.

Fader (SLE/only).

To adjust levels between front and rear speakers, push in the ON/OFF switch and rotate.

SL/X:

Pull out the ON/OFF switch to balance the stereo effect on the front to rear speakers.

3. Tone control

The tone control lever is located behind the L.H. knob (ON/OFF switch) up for treble sound, down for bass sound.

4. Tape eject (manual)

Push to eject tapes. Once a tape has been ejected the radio will play.

5. Dolby ® indicator*

This lights up when Dolby switch is engaged.

6. AM indicator

The light will glow to indicate when AM is in use.

7. FM indicator

The light will glow to indicate when FM is in use.

8. Cassette tape operation

The tape system automatically overrides the radio. To play a tape turn the radio on and then insert the cassette—the radio will switch off when the cassette is fully in. When the tape starts playing adjust volume, tone and balance to suit. The cassette is ejected by the eject button (No. 4) or by turning off ignition. When inserting a cassette push the cassette firmly into the slot with the flat of your finger until it hits a stop, then release the cassette which should freely drop into position.

DO NOT USE ANY DOWNWARD PRESSURE.

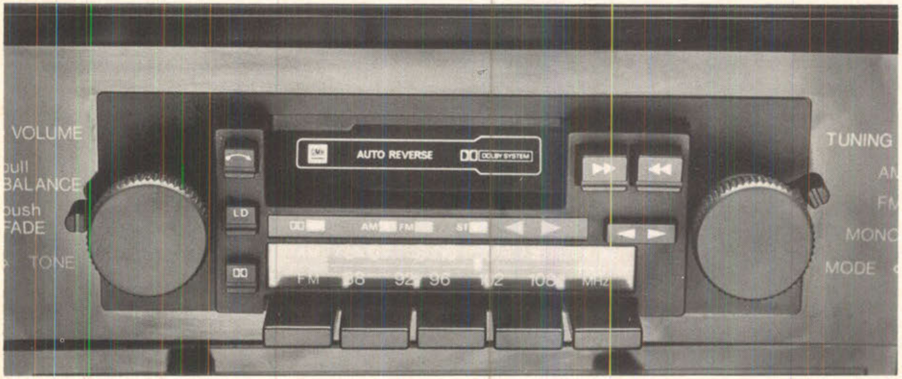
9. Stereo indicator

This green panel illuminates when the FM stereo button has been selected on the wave band switch and the station chosen is broadcasting in stereo.

10. Antenna trimmer

Extend aerial fully, select AM. Tune to a position on the dial at approximately 1400 kHz and turn trimmer screw until noise is loudest. The trimmer screw is accessible through the cassette flap.

11. Track direction indicators



12. Fast forward/rewind buttons

For fast forward operation push the button showing the same direction as the track indicator (11). For fast reverse push the opposite button to the direction shown on the track indicator.

13. Program selector

Tape program tracks are changed by pushing this button.

14. Tuning control

The receiver may be tuned at any time by means of the manual tuning control; this will not affect the ability of the push-buttons to recall preselected stations.

15. Waveband selector

A 3-way switch is located behind the tuning control. The top setting is for AM reception and the centre setting for FM. The bottom setting provides FM mono reception for distant stations with consequent decrease in background noise level.

16. Push-button tuning

To set the push-buttons to the required stations, proceed as follows:

1. Switch the receiver ON.
2. Set the VOLUME control to a higher then normal position.
3. Unlock the push-buttons (or push-button) by pulling firmly outwards.
4. Accurately tune the receiver to the required station with the manual tuning control.
   Note: Subsequent push-button tuning can only be as accurate as your initial setting up.
5. Lock push-button to the station by pushing in firmly.
6. Repeat steps 4 and 5 for each remaining station and push-button.

17. Dolby ® switch*

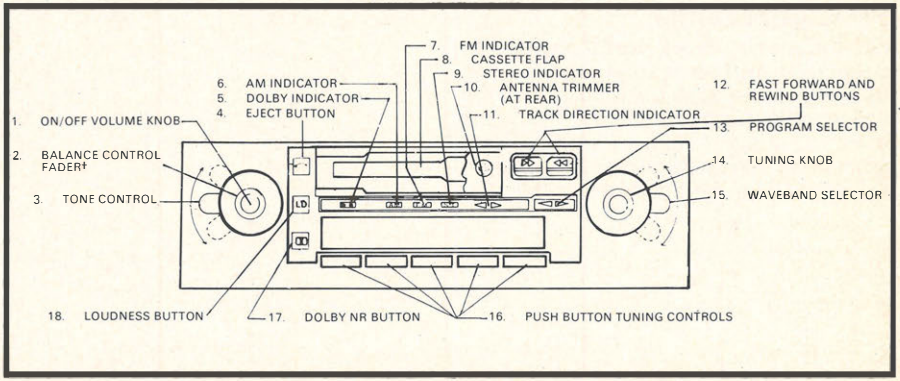
For playing cassettes using the Dolby system, depress the button, and the Dolby noise reduction indicator lamp will illuminate. Any cassette tape recorded without the Dolby system should be played back with this switch at the released (off) position.

18. Loudness switch

When listening to sound at low volume, it sometimes sounds as if both low and high notes are missing, that is because of an acoustic character of human ears. Depressing LD button boosts low and high frequencies to compensate for the effect and give a rich sound quality even at low volume levels. This switch has less effect when the volume is louder.

Power Antenna

(See page 35)


7. FM INDICATOR
8. CASSETTE FLAP
9. STEREO INDICATOR
6. AM INDICATOR
5. DOLBY INDICATOR
4. EJECT BUTTON
10. ANTENNA TRIMMER (AT REAR)
12. FAST FORWARD AND REWIND BUTTONS
1. ON/OFF VOLUME KNOB
11. TRACK DIRECTION INDICATOR
13. PROGRAM SELECTOR
2. BALANCE CONTROL FADER†
14. TUNING KNOB
3. TONE CONTROL
15. WAVEBAND SELECTOR
LD
18. LOUDNESS BUTTON
17. DOLBY NR BUTTON
16. PUSH BUTTON TUNING CONTROLS

†Where fitted.

---

* Dolby and the Double D symbols are the Registered trademarks of the Dolby Laboratories.

AM/FM radio reception

The two types of radio signals

There are two basic types of radio signals—AM or amplitude modulation, in which the transmitted sound causes the amplitude, or height, of the radio waves to vary— and FM or frequency modulation, in which the frequency of the wave is varied to carry the sound.

AM signal range

AM broadcast waves can curve or bend around obstructions, and thus tend to follow the curvature of the earth. The upper atmosphere (ionosphere) reflects AM signals back to earth, so stations can be heard at fairly long distances, especially after dark when the ionosphere layer rises.

FM signal range

FM broadcast waves do not bend, but rather reflect off some solid objects. They usually pass through the ionosphere and are not reflected back to earth. This gives them a straight line-of-sight transmission, which limits good FM reception to about 40 km from the transmitter.

Electrical disturbances

Radio waves may pick up electrical disturbances during transmission. They mainly affect the wave amplitude, and thus remain a part of the AM reception. They interfere very little with the frequency variations that carry the FM signal.

AM reception—Because AM sound is based on wave amplitude, it's not possible to filter out the electrical static without removing the sound as well. As a result, AM reception can be disrupted by such things as lightning, power lines and neon signs.

FM reception—Because FM transmission is based on frequency variations, interference that consists of amplitude variations can be filtered out, leaving the reception relatively clear, which is the major feature of FM radio.

Speakers

The standard radio speaker for SL models is located in the instrument panel in front of the glove box. SL/X sedan models fitted with the AM/FM stereo radio and cassette player have a second speaker located on the left side of the parcel shelf above the back seat. SL/E sedan models fitted with an AM/FM stereo radio and cassette player have a speaker in each front door and two speakers fitted in the rear parcel shelf. Balancing of the speakers is described in the radio description on page 36. With the wagon the extra speakers where fitted are located in the rear door.

Trip computer and clock

(where fitted)

The computer has an integrated display and function module located centrally in the instrument panel. When the ignition is turned on the clock will be displayed automatically.

To operate the trip computer

—When ignition is turned on, the display will show time.

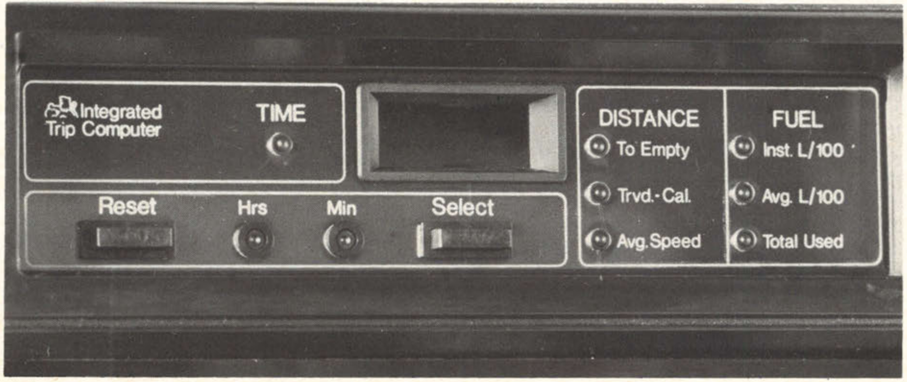
—To sequentially select the following functions, depress the button marked SELECT.

- Distance to empty (km).
- Distance travelled since reset (km).
- Average speed since reset (km/hr).
- Instantaneous fuel usage (litres/100 km).
- Average fuel usage since reset (litres/100 km).
- Total fuel used since reset (litres).

To reset the computer, press both RESET and SELECT buttons on the display module simultaneously.

The clock and distance to empty are unaffected by reset, all other functions go to zero.

The following is a detailed description on the operation of the trip computer and its functions.



Display

The computer has a 4 digit display together with 4 press buttons. The two extreme buttons are the "Reset" and "Select" buttons which are used most often and for this reason are prominent. The two inner buttons are used to set the time and calibration number and are almost flush with the module surface to prevent accidental operation. These buttons are activated by depressing with a pencil or similar instrument.

Function

The function being displayed is indicated by a red light opposite that function name.

The functions are:

- Time.
- Distance to empty (km).
- Distance travelled for trip (km).
- Average speed for trip (km/hr).
- Instantaneous fuel usage (litres/100 km).
- Average fuel usage for trip (litres/100 km).
- Total fuel used for trip (litres).

The functions are called up in **sequence** by depressing the "Select" button, each time the "Select" button is pressed the computer goes to the next function.

While the "Select" button is depressed the display will show zero.

Resetting

To reset the computer both "Reset" and "Select" buttons must be pressed simultaneously. This will reset all functions to zero with the exception of "Clock" and "Distance To Empty".

When resetting, if the select button makes contact prior to the reset button, the computer will go to the next function.

When the battery is first connected the computer should be "Reset" to initialize its data.

When ignition is turned on the "time" function will be displayed irrespective of what function was being used at ignition turn off.

Clock

The clock is a 12 hour clock with a flashing decimal point.

When the battery is first connected the clock will show 12.00 and if 12.00 is not the correct time, appropriate setting is achieved by depressing the right hand flush button for minute adjustments and the left hand flush button for hours adjustment (use a pencil or like object). It is suggested that minutes be adjusted prior to hours because as the minutes pass 60 the hours number automatically increases by one.

The clock can be accurately set as the next minute will not display until 60 seconds after releasing the adjustment button.

Distance to Empty (DTE)

The distance to empty function is an estimate on how much further the vehicle can be driven on the fuel remaining in the tank, based on the rate of fuel usage for the previous 15 minutes.

The DTE readout is in whole numbers only. No computer can predict the future so the DTE function can only be an estimate based on previously obtained information. For this reason, as conditions become more suited for economical driving the distance to empty could increase, for example, from city to highway driving. After initial battery connection DTE will start at 500, the computer will then perform an initial update from a short average prior to commencing the normal long averaging process. The computer is equipped to flatten out fluctuations of fuel level in the tank and rate of fuel usage. It will update the readout after the consumption of approximately 0.3 litres of fuel.

Due to the high fuel level fluctuations whilst moving, the distance to empty displayed is averaged over a period of 15 minutes. This does not matter during normal operation but after filling with fuel a long delay to display a sensible DTE would not be acceptable. After a fill of 10 litres or more the computer will calculate the DTE from a short average at the next normal update and the long averaging will proceed from the new figure.

Distance travelled

This function shows the distance travelled in kilometres since the computer was reset, it shows two decimal points up to 100 km and whole numbers thereafter.

The computer is automatically set with a calibration number of 625 that results in an accuracy of distance recording equal to that of the instrument odometer. For those people who wish to take full advantage of the accuracy of the trip computer (1 metre in 10km) and calibrate their particular vehicle, the following procedures is to be followed:

(a) Line up the vehicle against a known marker, e.g. centre pillar against a major highway shield.

(b) Select Trvd-Cal mode.

(c) Press left hand flush button (second from left) on the display unit and display will go to zero.

(d) Drive off and the display will increase in whole numbers.

(e) Stop vehicle exactly 10 km from starting point, e.g. centre pillar against a major highway shield 10 km from original shield.

(f) Press right hand flush button. When this button is released the distance travelled since reset will display and the last number shown will enter the computer memory as the calibration number.

The calibration number should be

between 615 and 650 for standard vehicles, however, special tyres, tyre pressure, vehicle loading, etc. will have a bearing on this number.

Depressing the right hand flush button any time the distance travelled/calibrate function is called up will display the calibration number. Note that by default the computer will set to a number of 625 for those who do not wish to undertake a specific calibration. Also, if the battery is disconnected and reconnected, the calibration will automatically set to 625. If required calibration number is known, select trav/calibrate mode, press left hand flush button, drive vehicle until required calibration number is reached then press right hand flush button. Alternatively, recalibrate as described earlier.

Whilst in the calibrate mode, i.e. after the left hand flush button is pressed and prior to depression of the right hand flush button, the "Select" button is disconnected as selection of other functions during the calibration procedure would affect the calibration number and computer distance functions would be inaccurate.

Average speed

The average speed reading measures average speed since the computer was reset and only calculates this average speed whilst the ignition is on.

To enable the computer to collect enough data to calculate a sensible speed the display will show zero for the first minute after reset.

Reading is updated at one minute intervals.

Instantaneous consumption

The instantaneous fuel consumption function reads in whole numbers only the litres per 100 km and updates at half second intervals.

When the vehicle is stationary the display shows zero, however, when slowing down to a stop due to fuel being used and a small distance being travelled, some large numbers may be displayed. Also when the function is first called up some large numbers may appear due to the small time frame over which the computation is prepared.

Average consumption

The average fuel consumption calculates fuel usage since the last reset and reads in litres/100 km. It updates at approximately one minute intervals.

Fuel used

Total fuel used since reset is measured in litres to a maximum of 999 litres.

NOTE: As the trip computer draws current even with the ignition off it is a good practice to disconnect the battery if the vehicle will NOT be driven for extended periods. On battery disconnection, previous information will be lost and it is a good practice to press both reset and select buttons simultaneously to ensure correct operation.

Remember after a battery disconnection a computer reset will be required. An unintended reset may sometimes occur due to external influences such as very high voltage power lines or some very powerful radio signals.

Transaxle controls

4 speed manual transaxle

This system has four fully synchronised forward gears and a non-synchronised reverse gear.

The gear selection pattern is indicated on the knob of the gear lever.

For comfortable driving:

First gear—low: This is synchronised and can be used at speeds up to 40 km/h. When decelerating do not select this gear unless the vehicle speed is less than 30 km/h.

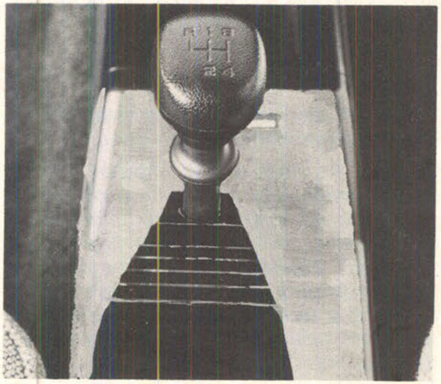
Second gear—low intermediate: Use this gear at speeds up to 60 km/h when driving in traffic. It is also useful on steep hills but do not select this gear unless vehicle speed is less then 50 km/h.

Third gear—high intermediate: Use this gear for acceleration and deceleration above 35 km/h.

Fourth gear—high: This is the normal cruising gear at speeds above 55 km/h. A lower gear should be selected for acceleration or deceleration.

Reverse gear: This gear is not synchronized therefore must never be engaged unless the vehicle is stationary. A slight pause between pushing the clutch in and moving into gear is desirable to allow all the rotating components to stop and avoid gear crashing. The slide on the gear lever just below the knob must be raised to allow the lever to pass into the R gate path.

Neutral—For use when starting or running the engine while the vehicle is stationary. **Never allow the vehicle to travel while the transaxle is in neutral.**



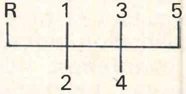
5 speed manual transaxle*

This system has five fully synchronised forward gears and a non-synchronised reverse gear.

The gear selection pattern is indicated on the knob of the gear lever.

First, Second, Third, Fourth and **Reverse gears** operate as described under 4 Speed Manual Transaxle.

Fifth Gear — Overdrive: Pull the lever knob against spring pressure in order to pass into the overdrive position (Fifth gear). Use this gear for highway cruising above 80 km/h for fuel economy but use a lower gear when significant acceleration or retardation is desired.



NOTE: To ensure minimum exhaust emission and fuel consumption shift the gears at the following speeds. From 1st to 2nd, 20 km/h, from 2nd to 3rd, 35 km/h, from 3rd to 4th, 55 km/h and from 4th to 5th*, 80 km/h.

Back-up lights

If the ignition is on, these will operate whenever Reverse is selected.

*Where fitted.

Automatic transaxle

T-bar shift lever*

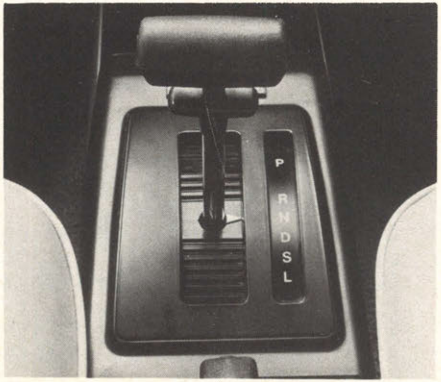
The engine will not start unless the selector is in either P or N.

After the engine has started select your gear—normally R or D.

Selection of gears from L to P or P to L and any intermediate positions can be made by raising the release bar below the shift lever handle.

Shifting the lever from L to S to D to N does not require use of the release bar but the release bar must be raised to select R or P.

Selecting positions from P requires raising the release to move out of PARK. Releasing the release bar before R will still allow selection through R to N to D. The release bar must be raised again to shift into the positions S or L.



What the positions are for:

P —Parking. Always use the parking brake as well. (Refer safe driving hints page 8.) Your engine may be started in this position.

R —Reverse. Your car must be stationary before you select this position. If the ignition is on, back-up lights will operate whenever Reverse is selected.

N —Neutral. This position can be used to start the engine. It must be used if the car is being towed.

D —Drive. This is the normal driving position and allows for adequate acceleration for all but extreme driving conditions.

NOTE: In this position the vehicle begins accelerating in low gear and shifts automatically into 2nd and then 3rd gear. When applying gradual and even accelerator pressure, shifts into higher gears takes place earlier than when accelerating rapidly.

S —Second. This may be used going down moderately steep hills. It will provide slight engine braking without the use of the brakes.

Don't use at speeds over 110 km/h.

L —Low. This gives maximum engine braking for steep hills. Shift back to S or D when you've negotiated the difficult sections.

Don't use at speeds over 65 km/h.

***Where fitted.**

Automatic transaxle (cont.)

Passing

When the accelerator is pressed down hard to wide open throttle (W O.T.) the gear shifts shown below will normally occur automatically. Speeds given may vary depending on tyres.

SELECTION	SPEED CHANGES*	EFFECT AT W.O.T.
SHIFT LEVER IN D	Over 110 km/h Under 105 km/h Under 60 km/h	No change Changes to Second gear changes to first gear
SHIFT LEVER IN S	Over 65 km/h Under 60 km/h	No change Changes to First gear
SHIFT LEVER IN L	Don't exceed 65 km/h	No change

*These speeds are subject to change with changes in transmission calibration and so should only be used as an indication.

Automatic driving don'ts

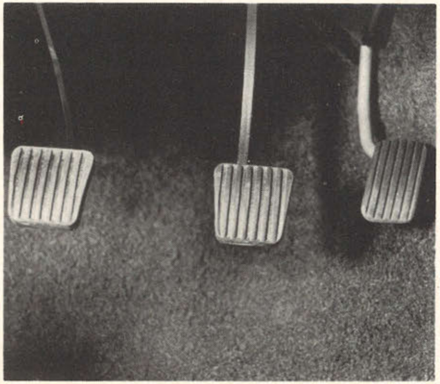
- Don't rev the engine with the brakes on in either L, S, D or R. This will overheat the transmission.
- Don't rev the engine to hold it on a slope. Use the brakes.
- Don't move into either R or P unless the vehicle has stopped.
- Don't ever coast the vehicle in N—this lessens your control and there is no engine braking.

Floor controls

Diagonally split circuit brake system

The braking system on your Camira is actually two separate systems; one operating the right hand front and left hand rear and the other operating the left hand front and right hand rear.

Hydraulic pressure is provided from a tandem design master cylinder which isolates the two systems. This means there are two completely separate hydraulic circuits each supplying pressure to half of the braking system. In the event of a failure in one circuit, the other circuit will be fully operational to stop the vehicle, although with increased pedal effort. The diagonally split brake system, combined with the negative scrub radius front suspension, helps to pull the car up straight in the event of a circuit failure.



Each brake system includes a proportioning valve. Under normal operation this reduces the pressure to the rear brakes during heavy stops to compensate for weight transfer.

After you've been driving your vehicle for a while you will become used to the feel of the brakes when they are operating normally. If you notice any change in this "feel", have them checked.

Power-assisted brakes

These will still work with the engine switched off, but you would have to apply a lot more pressure to the brake pedal than usual. To be safe—never run downhill with the engine off, and never coast with the engine off. Also, never have the vehicle towed on 4 wheels without a rigid connection between the two vehicles. A tow truck is safer.

Front disc brakes

These brakes adjust themselves automatically to compensate for wear.

With new disc pads it is recommended that you do not brake unnecessarily hard during the first 500 km except in the case of emergency.

Regular maintenance as detailed in the maintenance section is very important for your safety.

Rear drum brakes

These self adjust every time you use the brake.

Accelerator pedal

The accelerator pedal is used to regulate engine power and vehicle speed.

Clutch pedal

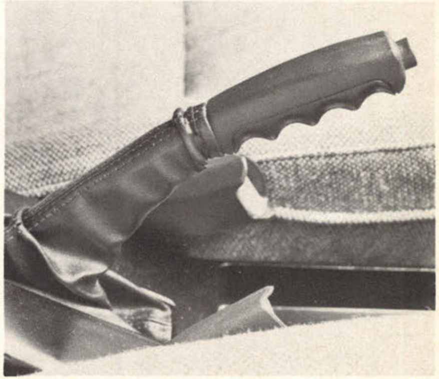
On models equipped with manual transmission this pedal is used to engage and disengage the clutch which enables you to select and change gears.

Parking brake

The parking brake lever is mounted on the floor, between the passenger's and the driver's seats.

To apply: Pull the lever straight up using the grip at the end of the lever. **Do not press the release button.**

To release: Pull the parking brake lever upwards while simultaneously pressing in the release button at the end of the lever with the thumb. After the ratchet system disengages, retain pressure on the button while lowering the lever.



Safety checklist

Follow these simple steps before driving your new Camira. They will help make your motoring safer and more enjoyable.

Before getting in

Check that the windows, mirrors and lights are clean.

Check tyre inflation.

If you intend to reverse, check that the area behind you is clear.

Before driving off

Be sure you understand your vehicle and know how to operate it safely.

Be sure that all doors are fully latched.

Position your seat for comfortable driving.

Adjust all rear vision mirrors.

FASTEN SEAT BELTS.

Check that the warning indicators light up when you turn the key to start the engine.

Release the parking brake.

If you are reversing, again check that the area behind you is clear.

Caution: Never leave loose articles inside the vehicle—they may become dangerous if you have a collision or stop suddenly.

Starting and driving

The following suggestions are for starting and driving and should be followed if you are to get the best out of your vehicle.

Parking brake

This should be firmly applied, and released only after you have started the engine and engaged gear.

Manual transmission

Press the clutch pedal down and check that the transmission is in Neutral.

Automatic transmission

Check that the selector level is in either N or P. The engine will not start if it is in any other position.

Engine

Cold starting

Your Camira engine has an automatic choke system.

Before starting a cold engine, press the accelerator pedal to the floor and completely release it again. This action sets the choke system for starting. Turn the ignition key to the START position until the engine is started. If the engine fails to start within a few seconds, turn the key to the OFF position then depress and release the accelerator pedal before turning the ignition key to the START position again. Release the key when the engine is started. The above procedure also applies if the engine stalls after starting. If the vehicle has been standing for several days, it may be necessary to repeat this procedure a few times until the engine starts. After the engine has started, allow it to run at fast idle for at least 10 seconds before engaging gears. Do not KICK DOWN, i.e. do not depress the accelerator pedal in an attempt to lower the engine idle speed. While the engine is running, the automatic choke gradually moves to the off position as the engine reaches normal operating temperature.

In temperatures below 0°C, let the engine run at fast idle in NEUTRAL for about one minute. Put automatic transmission into DRIVE without touching the accelerator pedal and wait for a few seconds for the engine to stabilise before driving away.

Flooding

Pumping the accelerator can cause flooding which will prevent the engine from starting.

If this occurs, press the accelerator down to the floor and hold it there while holding the key in the START position. When the engine starts, allow the accelerator pedal to return slowly to the idle position.

Warm starting

During summer, or when your engine is warm, the choke system operates only briefly—if at all.

To start—turn the key to start. If the engine fails to start within several seconds, progressively depress the accelerator pedal whilst cranking until the engine is started.

Initial driving

Manual transmission

Depress the clutch pedal and place the gear shift lever into the first or the reverse gear position. Lightly depress the accelerator pedal to increase the engine speed and slowly release the clutch pedal while simultaneously releasing the parking brake to set the vehicle in motion.

Automatic transmission

Depress the foot brake pedal and release the parking brake. Place the gear selector lever into DRIVE or REVERSE position. Release the brake pedal. Lightly depress the accelerator pedal to set the vehicle in motion.

Section 3

Emergencies, towing

Spare wheel storage

The spare wheel, jacking equipment and wheel nut wrench are stored in the luggage compartment, under the floor cover.

The spare wheel is secured by a wing nut. The jack and tools are in a moulded compartment located at the rear of the spare wheel.

Wheel centre cap (SL models)

To remove—Partially loosen wheel bolts and remove centre cap.

To replace—Hold centre cap in position whilst installing bolts.

Wheel trim (SL/X models)

To remove: Insert the blade end of the wheel nut wrench between the outer edge of the wheel trim and the wheel, diagonally opposite the tyre valve. With light blows using the palm of the hand and directed towards the wheel hub, force the wrench inwards for half the length of the blade (wedge) section. Then at several points around the wheel lightly pry the trim off by moving the wrench away from the tyre, using the wheel as a levering point.

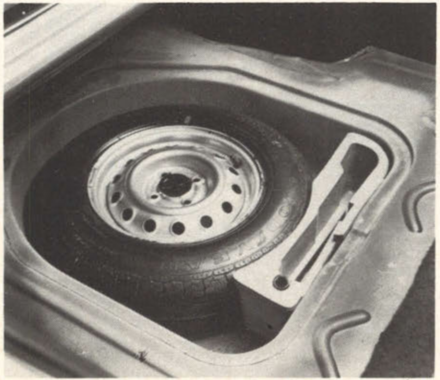
To replace: Position the trim so that the valve hole in the trim is directly over the valve. While pressing the trim firmly against the wheel at a position below the valve, knock the trim onto the wheel with several light blows using the palm of the hand. Repeat this operation at several positions around the edge of the trim until a secure installation is obtained.

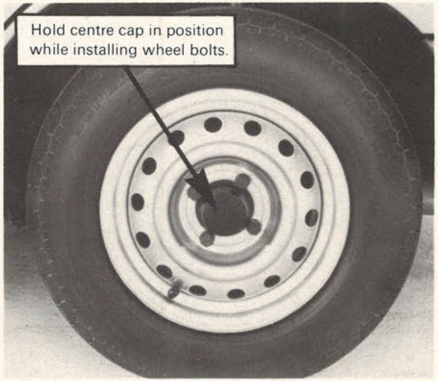
CAUTION: It may be necessary to protect the hand during this operation.

Centre trim (SL/X models)

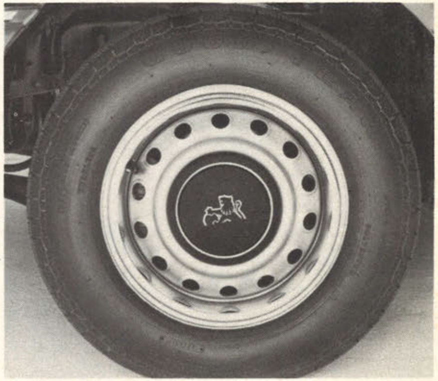
To remove: Insert the blade of the wheel nut wrench between the wheel and the trim at the trim recess provided and gently lever off by moving the wrench towards the wheel face.

To replace: Position the centre trim in the wheel cavity and press firmly into position.





Hold centre cap in position while installing wheel bolts.



Wheel centre cap (SL/E models)

To remove: Place the blade of wheel nut wrench in the slot in the centre cap and gently prise off.

To replace: Position the cap in the cavity with base opposite the slot edge in position then knock the cap into the cavity with the palm of the hand.

Wheel changing

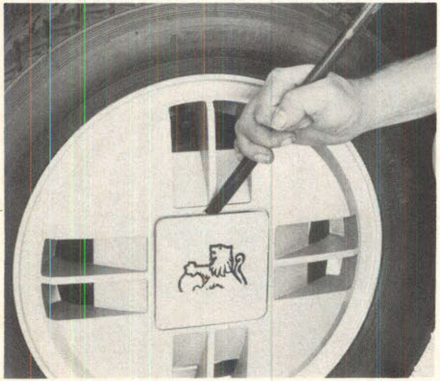
Safety hints

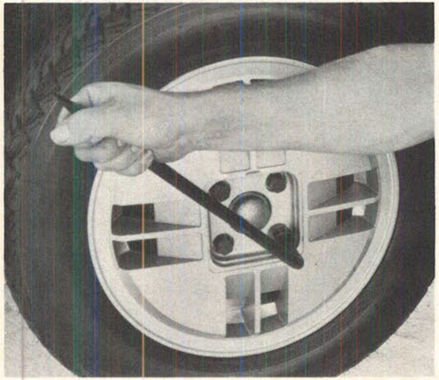
- Carefully follow jacking instructions in order to reduce the possibility of serious personal injury.
- The jack is designed for use ONLY when changing wheels.
- Never get beneath the vehicle when it is supported by the jack only.
- Do not start or run the engine while the vehicle is on the jack only.
- All passengers must be out of the vehicle when it is on the jack and the handbrake should be firmly applied.

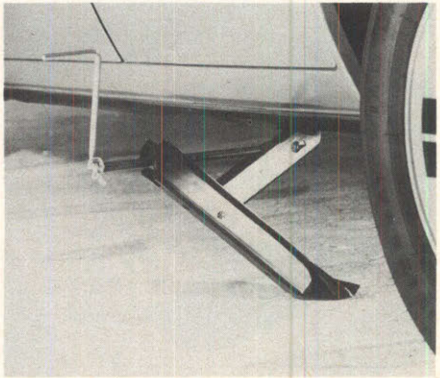
Instructions

1. Whenever possible, park on a firm level surface.
2. Activate the hazard warning flashers and apply the parking brake firmly.
3. Set automatic transaxle in park or manual transaxle in reverse and remove ignition key.
4. Remove the tools and spare wheel.
5. Chock the front and rear of the wheel diagonally opposite the jacking location to prevent wheel rotation.
6. There are four jack locations, two either side at front and rear of vehicle. (Refer illustration on page 51.)
   Place jack below the jack location nearest the wheel to be changed. Raise the jack and engage the "U" shaped lifting foot of the jack over the underbody flange at the jack location (refer illustration on page 51).

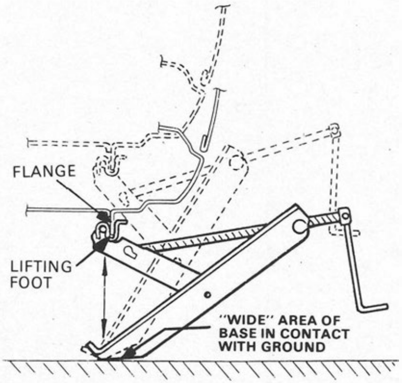
IMPORTANT: Ensure base of jack is located on the ground directly below the jack location so that "wide" area of the base is in contact with the ground. Refer illustration on page 51. See also the caution sticker on jack assembly for further details.







7. Remove centre wheel trim on SL/X or wheel centre cap on SL/E. Loosen wheel bolts.
8. Raise the vehicle by turning the jack handle until tyre clears ground.
9. Remove the wheel bolts and avoid losing them or getting dirt on the threads. On SL models, after partially loosening wheel bolts remove the wheel centre caps. Remove the wheel and change it over with the spare.
10. Tighten the wheel bolts finger tight and then partially tighten using the wrench. On SL models, hold the wheel centre cap over the centre of the wheel before inserting the bolts.

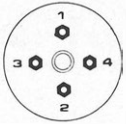


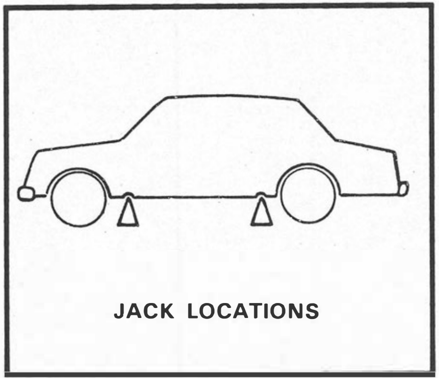
JACKING POSITION

11. Lower the vehicle and FULLY TIGHTEN the wheel bolts in diagonal sequence. Install wheel trim or centre cap.
12. Stow away the jack and tools and the changed wheel.

CAUTION: As soon as practicable, after a wheel change, the wheel bolt torques should be checked at a GMH Dealership, or by a competent person, to ensure correct tightness. The recommended wheel bolt torque is 95-100 Nm.

Wheel bolt tightening sequence



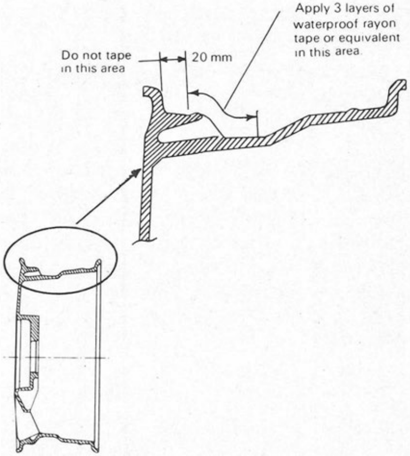


JACK LOCATIONS

Wheels and tyres

The SL/E alloy road wheel has slots cast into the rim section of the wheel to facilitate manufacture. Because of these slots, it is not recommended to fit the tyres with tubes. If in an emergency tubes are to be fitted it is recommended that the slots be covered with 3 layers of 50 mm wide waterproof rayon tape or equivalent to prevent chafing of the tube against the edge of the slots. Do **not** apply the tape within 20 mm of the rim flange as this is the tyre bead seating area. Refer to sketch below.

At the earliest opportunity a new tubeless tyre should be fitted thereby eliminating the need for a tube.


Apply 3 layers of waterproof rayon tape or equivalent in this area
Do not tape in this area
20 mm

Overheating

Engine

If this happens, stop by the road side and let the engine idle for about 2 minutes. While it is idling open the bonnet and check that the fan is operating.

Turn off the engine and while it is cooling check the radiator hoses for damage and leaks. Take care as the hoses and fittings will be hot.

When the engine has cooled check the coolant level in the radiator surge tank—it should be a little above the "Cold" mark on the tank. If coolant has to be added great care must be taken when undoing the filler cap as steam or hot fluid could escape and cause injury. Use only premixed coolant (see section on cooling) to top up and make sure the filler cap is tightened after filling.

If overheating occurs again have the vehicle checked by a GMH Dealer immediately.

CAUTION: DO NOT remove the radiator surge tank cap while the engine is still hot because the cooling system can blow out scalding fluid and steam under pressure which is likely to cause serious personal injury and loss of coolant.

When oil pressure indicator light comes on

- If the oil pressure indicator light comes on while engine is running, immediately stop engine.
- Check the level of the engine oil and check for leakage of lubricating oil at the same time. Replenish with specified engine oil up to the specified level, if necessary, and restart the engine to see that oil pressure indicator light goes out.

  If the oil pressure indicator light does not go out even with sufficient level of lubricant in the crankcase, or lubricant is leaking, obtain assistance from your GMH Dealer.

When charge indicator light comes on

- This indicates that the alternator is not charging. As soon as possible stop your vehicle and check for loose or broken fan drive belt. If loose, adjust belt tension. If the belt is found broken, or if it is not responsible for the trouble, have a GMH Dealer inspect and correct the fault.

  CAUTION: Driving under this condition will eventually discharge the battery. DO NOT drive for an extended period of time if the charge warning light is on.

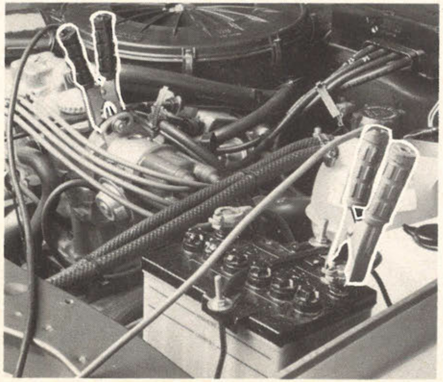
  Turning off all non essential electrical loads will extend the driving distance possible before the battery is discharged.

Emergency starting

Starting with auxiliary (booster) battery

To start the vehicle when the battery is discharged, use a single auxiliary battery of the same nominal voltage, i.e. 12 volts, as the discharged battery, with suitable jumper cables.

CAUTION: Never expose battery to open flame or electric spark—battery action generates hydrogen gas which is flammable and explosive. Don't allow battery fluid to contact skin, eyes, fabrics, or painted surfaces—fluid is a sulphuric acid solution which could cause serious personal injury or property damage. Wear eye protection when working with battery.



Both booster and discharged battery should be treated carefully when using jumper cables. Follow exactly the procedure outlined below, being careful not to cause sparks.

1. Set parking brake and place transmission in neutral. Turn off lights and other electrical loads.
2. Remove vent caps (or covers) from both the booster and the discharged batteries and lay them loosely in the open vent wells of each battery. This helps reduce the explosion hazard always present in either battery when connecting live booster batteries to discharged batteries.
3. Attach one end of one jumper cable to the positive terminal of the booster battery (identified by a red colour, "+" or "P" on the battery case, post or clamp) and the other end of same cable to positive terminal of discharged battery. Do NOT permit vehicles to touch each other, as this could establish a ground connection and counteract the benefits of this procedure.
4. Attach one end of the remaining negative (–) cable to the negative terminal (black colour, "–" or "N") of the booster battery, and the other end to the engine block of your vehicle as far from your battery as possible. Do not connect lead to the negative terminal of the discharged battery. Take care that clamps from one cable do not touch the clamps on the other cable. Do not lean over the battery when making this connection.
5. Start the vehicle with discharged battery.
6. Reverse this sequence exactly when removing the jumper cables. Reinstall vent caps or covers.

CAUTION:

Any procedure other than the above could result in: (1) personal injury caused by electrolyte squirting out the battery vents; (2) personal injury or property damage due to battery explosion; (3) damage to the charging system of the booster vehicle or of the immobilised vehicle.

Do not attempt to jump start a vehicle having a frozen battery because the battery may rupture or explode. If a frozen battery is suspected, examine all fill vents in the battery. If ice can be seen or if the electrolyte fluid cannot be seen, do not attempt to start with jumper cables as long as the battery remains frozen.

Push starting

Manual transmissions

- NEVER TOW the vehicle to start because the surge forward when the engine starts could cause a collision with the tow vehicle.
- When being pushed to start the engine, turn off all unnecessary electrical loads, turn starter switch to "ON", depress the clutch pedal and place the shift lever in fourth gear. Release the clutch pedal when speed reaches 15-25 km/h. Bumpers and other parts contacted by the pushing vehicle should be protected from damage during pushing.

Automatic transmission

If for any reason the starter motor is inoperative, it is **not possible** with an automatic transmission to push start the vehicle.

If the fault is a flat battery, the engine can be started with the aid of a booster battery.

Towing of the vehicle

Proper lifting or towing equipment is necessary, when lifting or towing the vehicle to prevent damage to it during any towing operation. However, in an emergency, a disabled vehicle may be towed in the following manner:

- Switch on hazard warning flashers of both vehicles.
- Fit the towing rope (safety chains or cables) to an eye at the front below the bumper.
- Place transmission in the neutral position and release the handbrake.
- Switch on to "Acc" to release steering column lock and to permit operation of windshield wipers and turn signals.
- For the sake of safety and to prevent damage to the vehicle it is advisable to avoid jerky movements and to drive slowly during towing operations.
- More brake pedal pressure is necessary for efficient braking since the brake servo unit is no longer operating.
- To prevent the entry of exhaust fumes from the towing vehicle into the passenger compartment of your vehicle, close the windows and stop entry of air via heating and ventilation jets.
- Vehicles with automatic transmission should not be towed faster than 50 km/h or further than 60 km. If the automatic transmission is defective or if a speed of 50 km/h or distance of 60 km is to be exceeded the front of the vehicle must be raised when towing.

Only the driver should be in a towed vehicle.

Fuse system

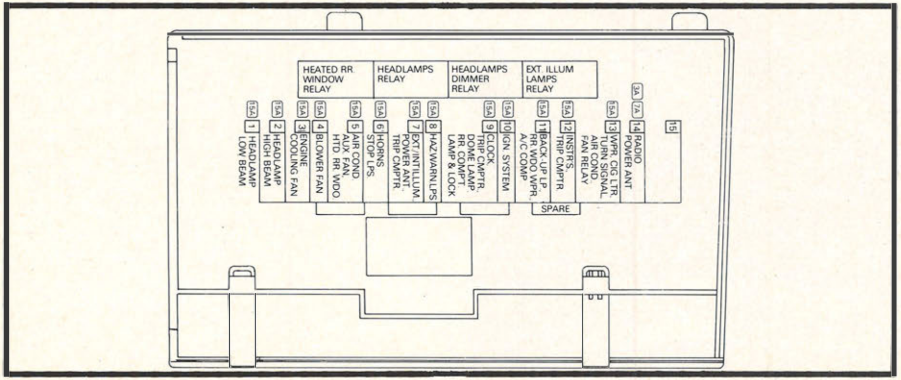
Fuses

The fuse block is located behind a flush fitting plastic cover at the lower right hand corner of the instrument panel, adjacent to the hood release. To gain access to the fuses remove the cover by pulling it by the finger grip.

If after replacing a burnt-out fuse, the new fuse burns out, this indicates that the fuse is still overloaded. The cause of the fault should be located and rectified, preferably by a GMH Dealer.

NOTE: A spare fuse is provided and located in the fuse block (see diagram below).

CAUTION: When replacing a fuse be sure to use a fuse of the specified amperage. Never install a wire or similar to replace a fuse as it may cause a fire hazard to the vehicle.


HEATED RR. WINDOW RELAY
HEADLAMPS RELAY
HEADLAMPS DIMMER RELAY
EXT. ILLUM LAMPS RELAY
15A 1 HEADLAMP LOW BEAM
15A 2 HEADLAMP HIGH BEAM
15A 3 ENGINE COOLING FAN
15A 4 BLOWER FAN
15A 5 AIR COND AUX. FAN. HTD. RR. WDO.
15A 6 HORNS STOP LPS
15A 7 EXT./INT. ILLUM. POWER ANT. TRIP CMPTR.
15A 8 HAZ.WARN.LPS
15A 9 CLOCK TRIP CMPTR. DOME LAMP RR. COMPT. LAMP & LOCK
15A 10 IGN. SYSTEM
15A 11 BACK-UP LP. RR. WDO WPR. A/C COMP
15A 12 INSTR'S. TRIP CMPTR
15A 13 WPR. CIG LTR. TURN SIGNAL AIR COND FAN RELAY
3A 7A 14 RADIO POWER ANT.
15
SPARE

Bulb replacement

Headlights

Note: Do not touch bulbs or reflectors with bare hands. Greasy fingers will cause stains which evaporate—eventually resulting in a dull reflector. Grease spots and even finger marks on halogen-bulbs will lead to bulb failure within a short time.

Inadvertently stained bulbs may be cleaned with tissue paper, or a clean non-fuzzy cloth, using alcohol or white spirits.

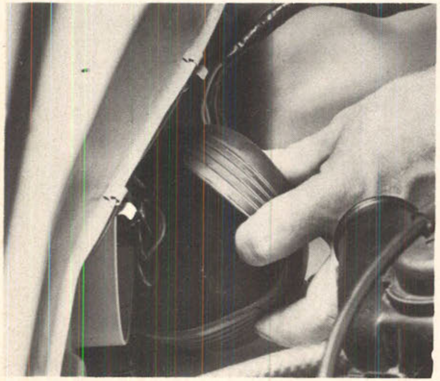
IMPORTANT: Headlight aiming is a safety item and should be carried out by your GMH Dealer, the adjusting screws are on both sides of each headlight cover cap.

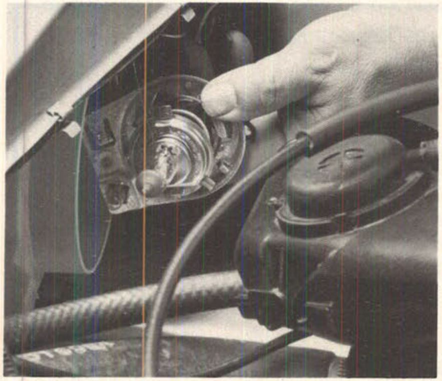
Headlight high/low beam

1. Open engine hood and support. Remove protective plastic dust cover from rear of headlight.
2. Remove plug socket with the wire from lamp base.
3. Press in retaining ring against the reflector, turn anti-clockwise and withdraw the lamp holder.
4. Remove bulb from lamp holder.
5. Insert new bulb so that the lug on the bulb engages in the recess in the lamp holder. Avoid touching the glass of the headlight globe as this drastically reduces the bulb life.
6. Proceed in reverse sequence to removal.
7. Re-aim headlights (headlight aim varies from bulb to bulb and the powerful Halogen beam is a safety hazard to other road users if it is aimed too high).

Parking light

Proceed as for headlight but remove the small bulb and replace. (Headlamp re-aiming is not necessary after this operation.)





Front turn and signal light

1. Remove lens attaching screws and the lens.
2. Remove the bulb by twisting and pulling taking care not to touch the reflector. Finger marks damage the reflector and cannot be removed.
3. Replace bulb and reattach lens ensuring the lens gasket is seated correctly.

Rear turn signals, stop and tail lights, back-up lights

Sedan

1. Twist the lamp holder and remove it from the retaining lugs.
2. Identify and remove the required bulb.
   The bulb sequence is
   Outboard—Turn signal
   Centre—Tail and stop
   Inboard—Reverse.
3. Replace bulb in socket.
4. Replace lamp holder by reversing above.

Wagon

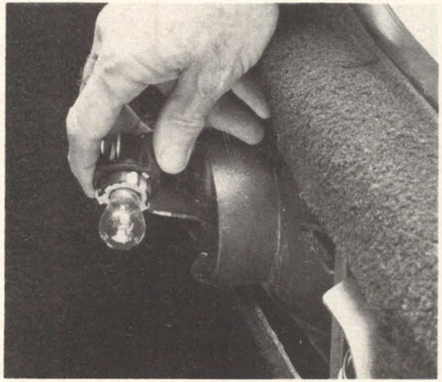
1. Unscrew the cross recessed headed screws and remove the lens.
2. Identify and remove the required bulb.
   The bulb sequence is
   Top—Turn signal
   Bottom—Tail and stop.
3. Replace bulb in socket.
4. Replace lens and tighten screws.

NOTE: On SL/E models the lamp cover has to be removed before starting the above operation.

Licence plate light

Sedan

1. To remove lamp from bumper, release spring on the right using a screwdriver and ease lamp out by moving upwards.
2. Depress protruding tongue and remove lamp socket from housing.
3. Remove bulb from holder.
4. Insert new bulb and replace holder.



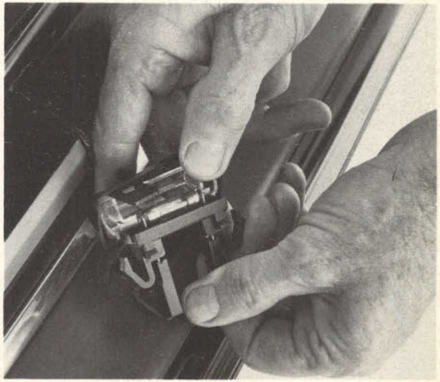
Wagon

1. Remove bulb (under lift gate handle) by pulling it out of the socket.
2. Replace by pushing bulb back into socket.

Reverse Light—wagon

(In licence plate surround)

1. Remove lens by removing the two screws.
2. Replace bulb—DO NOT TOUCH REFLECTOR as marks cannot be removed.
3. Replace lens ensuring the gasket is seated properly.

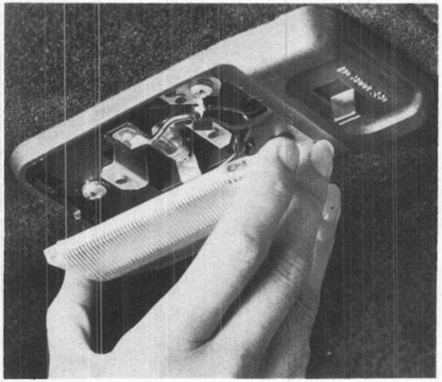


Instrument panel and console lamps

Replacement of these bulbs is recommended to be done only by a GMH Dealer or another competent person as all wiring and associated attachments are prone to damage if not serviced correctly.

Interior light

1. Carefully prise off the light cover using a screwdriver.
2. Lightly press bulb in the direction of the spring clip and remove.
3. Install new bulb.
4. Replace light cover.



Bulb Specifications

Bulb	GMH Part No.	Trade Part No	Base type	Rating
Headlamps	11071361	—	H4	60/55w
Parking (front)	11051209	—	Micro parallel pin	4w
Turn signal	11062779	—	Std. parallel pin	21w
Back up lamp	11062779	—	Std. parallel pin	21w
Stop and tail	9428902	1157	Std. offset pin	32/3cp
Rear compartment lamp	11030669	—	Festoon	10w
Number plate lamp (sedan)	SP1903	—	Festoon	3w
Number plate lamp (wagon)	11079451	—	Wedge	5w
Auto. trans. selector lamp	11062449	—	Mini wedge	1.2w
Cigar lighter illum.	11062449	—	Mini wedge	1.2w
Dome lamp	82194015	—	Festoon	10w
Glove box	11015639	—	Festoon	5w
Centre facia illum.	11062449	—	Mini wedge	
Heater control illum.	11062449	—	Mini wedge	1.2w
Ash tray illum.	9421330	194	Wedge	2cp
Instr. cluster illum.	9415969	158	Wedge	2cp
Warning lamps	9415969	158	Wedge	2cp
Power antenna switch illum.	VS 15825	—	Special	0.4w
Heated rear window switch illum.	VS15825	—	Special	.08w
Heated rear window indicator	VS15826	—	Special	.08w

Caravan or trailer towing

Your Camira is designed primarily as a passenger vehicle so handling, durability and economy may be affected by towing a caravan or trailer.

Before towing, check that the correct equipment is fitted to your car. Your GMH Dealer will help you.

Never exceed the loadings given in the table.

Running-in period

It is best to drive your new Camira for 1500 kilometres before towing a load.

The same applies if you have a new or reconditioned engine or transaxle.

Maintenance—automatic transmission

More frequent vehicle maintenance is required when using your vehicle to pull a trailer. Where an automatic transaxle is fitted the fluid will need to be changed every 12 months or 20,000 kilometres.

Tyres

When towing, your tyres should be inflated to the maximum recommended pressure.

Tow bar load

Your vehicle-caravan combination will handle best if the load at the attachment coupling is kept withing the limits shown in Table No. 1.

If you don't have an equalising load levelling hitch fitted then the load in the rear compartment must be reduced an amount equal to the load on the coupling.

If an equalising load levelling hitch is fitted that fully compensates for towbar load by restoring the towbar ball height to the unhitched position you don't need to reduce the load.

Equipment recommendation

Satisfactory towing performance depends in part upon the specification of the vehicle and partly on the equipment which must be added so as to adapt the vehicle to the towing function. Both vehicle specification and towing equipment should be selected according to the range of loads and speeds of the intended towing operation.

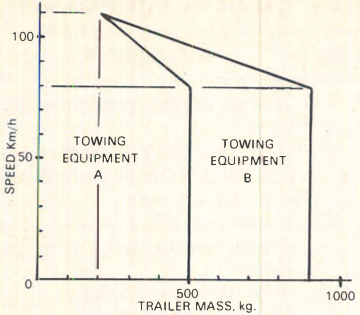
The following information will assist you in determining the combinations of vehicle specification and towing equipment best suited to your purpose.

Table 1 specifies the content of two classes of towing equipment and the graph on page 60 shows the towing equipment appropriate to various ranges of speeds and trailer loads. It will be seen that the loads should be reduced for travel at higher speeds.

TABLE I TOWING EQUIPMENT

CLASS	CONTENT
A	Trailer wiring provision package. G.M. tow bar package. Ball load: 10% of towed mass min., 50 kg max.
	Trailer wiring provision package. G.M. tow bar package. Load equalizer hitch. For optimum control. use driver controlled independently operated brakes. Overrun brakes may not be suitable. Tow bar ball load: 10% of towed mass min. up to 75 kg max.

With towing equipment B, the maximum trailer mass is applicable up to a road gradient of 12% and altitudes up to 1500 metres. Above these limits, the engine output and gradeability drops so that the maximum trailer mass may possibly not be fully utilised.



Note: If the trailer uses electrical current from the vehicle other than for all tail lights, stop lights or turn signals, the use of a heavy duty battery and heavy duty alternator are recommended.

Electrical connection

A special wiring harness is available from your GMH Dealer or accessories stockist. This is the only system recommended by GMH and use of any other may affect your warranty.

DANGER: If you remove your tow bar be sure to have any mounting holes properly sealed. Dangerous exhaust fumes can enter through these holes.

The tow bar ball load (measured as the vertical force required to support the caravan coupling at the tow bar ball height before connecting the trailer to the car) must not exceed 75 kg. Also for tow bar ball loads in excess of 50 kg and/or trailer weights above 500 kg, load equalizers are required.

GM towing equipment is recommended where it is available. Where it is not available no recommendation is made as to the make of equipment which should be used. Neither General Motors-Holden's Limited nor General Motors-Holden's Sales Pty. Ltd. will accept liability for defects occurring in towing equipment not marketed by General Motors-Holden's Sales Pty. Ltd. or for defects in the vehicle arising from the use of such equipment.

Safe towing—caravan or trailer

- Your vehicle will handle differently with a load behind. It's a good idea to make a couple of short distance trips with the caravan or trailer before you set off on the big one.
- Have your engine tuned before you leave.
- You should have an extended-arm mirror on **both** sides of the vehicle.
- Headlights should be re-aimed after the loaded caravan has been hitched up.
- Use a lower gear, rather than your brakes, when going down steep hills.
- If your caravan or trailer runs off the edge of the bitumen—and this is fairly common—allow the left wheels of the vehicle to run off as well. Then wait for an opportunity to steer back on to the road. A sudden attempt to steer back will cause dangerous swerving.

CAUTIONS:

1. A frame mounted equalizing hitch with a sway control of sufficient capacity is required for trailers over 500 kg loaded weight.
2. Do not use axle-mounted hitches. They will cause damage to the axle, wheel bearings, wheels or tyres.
3. Trailer brakes are required on trailers over 500 kg loaded weight except where State laws may specify a lower limit. Some States specify that the maximum load to be towed must not exceed the vehicle weight.
4. It is permissible to tap into the brake system with a unit not more than 0.21 cc of fluid displacement during the operation of the brakes.
5. When the tow bar is not is use, the tongue should be removed in order to prevent injury to pedestrians.
6. CAUTION: WHENEVER A TOWBAR IS REMOVED BE CERTAIN TO HAVE ANY MOUNTING HOLES IN THE UNDERBODY PROPERLY SEALED TO PREVENT THE POSSIBLE ENTRY OF EXHAUST FUMES, DUST AND WATER.

Loading your Camira

Overloading is a safety hazard and could also shorten the life of your vehicle or its parts. Your GMH Dealer can advise you about maximum loading limits for your particular vehicle.

Tyre maximum load rating and maximum vehicle loading

Kerb weight is the weight of an unloaded vehicle which includes the weight of all coolants and lubricants together with a full tank of fuel. It must be understood that the maximum load rating shown on the tyre placard is not an actual load capacity that can be used for each wheel. While the tyre manufacturers rate the tyre for the load application at the maximum pressure shown on the placard, the vehicle manufacturer's suspension, ride and handling characteristics must be taken into account. Therefore, the maximum rear axle loading or the maximum loaded vehicle weight should not be exceeded.

Towbar loads

The load imposed on the towbar ball must be included in the maximum rear axle loading and the maximum loaded vehicle weight, (refer Table page 59) unless a load equalizing hitch is used which fully compensates for towbar load by restoring the towbar ball height to the unhitched position.

Roof Rack Loads

No increase in maximum loaded vehicle weight is allowable where a roof rack is fitted. It must be understood that roof rack loads alter the handling characteristics of a vehicle due to a change in the centre of gravity. When carrying loads on the roof rack avoid abrupt swerving or sharp steering manoeuvres. The load should be evenly distributed. A load of no more than 50 kg is suggested as a reasonable limit.

Booster springs and superlift shockabsorbers

The use of booster springs or superlift shockabsorbers DOES NOT increase the load capacity of the vehicle. The maximum loads shown in the chart below must NOT be exceeded if overloading of axle components and the consequent shortening of service life is to be avoided.

Superlift shockabsorbers do allow adjustment of the vehicle's height, so that improved ride and handling and better ground clearance in rough terrain may be obtained when running heavily laden.

Caution: Do not drive the car with superlift shock absorbers inflated when the car is unladen (car should be at normal trim level) as vehicle handling is affected.

VEHICLE MASS CHART

Model	Kerb mass kg	Maximum rear axle loading kg	Maximum loaded mass kg
Camira SL sedan	1029	745	1521
Camira SL/X sedan	1038	743	1517
Camira SL/E sedan	1064	743	1525
Camira SL wagon	1070	810	1586
Camira SL/X wagon	1089	815	1595
Camira SL/E wagon	1108	801	1591

Section 4

Specifications, emission

Serial numbers

V.I.N. plate

(Vehicle identification number)

Attached to the top of the panel in front of the shock absorber turret under the engine hood on the right hand side (driver's side).

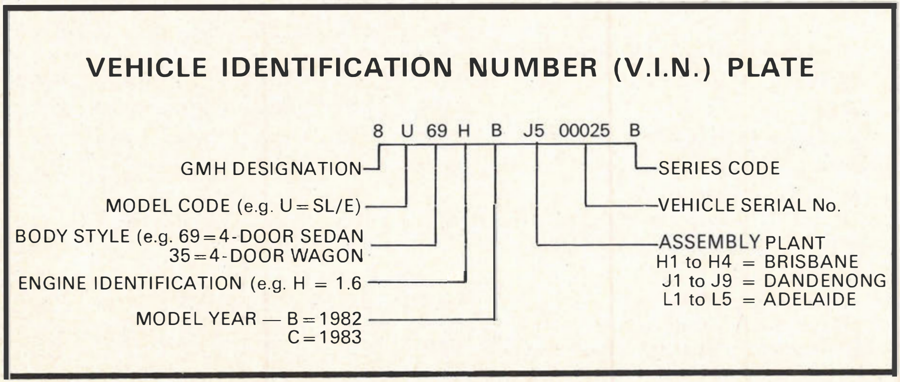
Body and option identification plate

Attached to the top right side (driver's side) of the panel in front of the shockabsorber turret under the engine hood. Plate shows body styles, body serial number, paint and trim colour combination, paint number, date built, engine, transmission and axle ratio options.

The built date is defined as "the date of manufacture" by calendar month and year in which the body shell and power train sub-assemblies are conjoined and the vehicle is driven or moved from the production line.

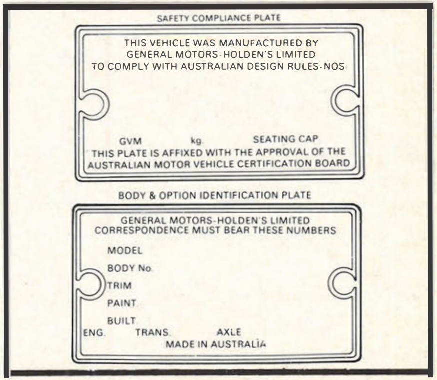
Safety compliance plate

Attached to the top of the panel in front of the shock absorber turret under the engine hood on the right hand side (driver's side). Shows vehicle series, model, style, month and year of production, vehicle serial number, approved seating capacity, and the Australian Design Rules with which the vehicle complies.



VEHICLE IDENTIFICATION NUMBER (V.I.N.) PLATE

8 U 69 H B J5 00025 B
GMH DESIGNATION
MODEL CODE (e.g. U=SL/E)
BODY STYLE (e.g. 69=4-DOOR SEDAN
35=4-DOOR WAGON
ENGINE IDENTIFICATION (e.g. H = 1.6
MODEL YEAR — B=1982
C=1983
SERIES CODE
VEHICLE SERIAL No.
ASSEMBLY PLANT
H1 to H4 = BRISBANE
J1 to J9 = DANDENONG
L1 to L5 = ADELAIDE



SAFETY COMPLIANCE PLATE

THIS VEHICLE WAS MANUFACTURED BY
GENERAL MOTORS-HOLDEN'S LIMITED
TO COMPLY WITH AUSTRALIAN DESIGN RULES-NOS
GVM
kg.
SEATING CAP
THIS PLATE IS AFFIXED WITH THE APPROVAL OF THE
AUSTRALIAN MOTOR VEHICLE CERTIFICATION BOARD

BODY & OPTION IDENTIFICATION PLATE

GENERAL MOTORS-HOLDEN'S LIMITED
CORRESPONDENCE MUST BEAR THESE NUMBERS
MODEL
BODY No.
TRIM
PAINT
BUILT
ENG.
TRANS.
AXLE
MADE IN AUSTRALIA

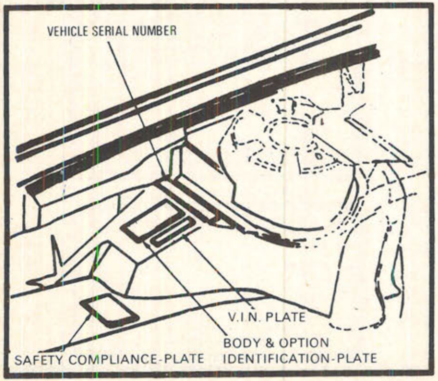
Vehicle serial number

(Chassis number)

Stamped on the front right hand side of the wheelhouse panel forward of the strut tower—access under the engine hood.

Engine number

Stamped on the front top face of the engine block adjacent to the left hand wheelhouse panel.



Model identification

Model range	Model* group	Style* number	V.I.N. Code number
Camira sedan SL	8JH	69	8H69
Camira wagon SL	8JH	35	8H35
Camira sedan SL/X	8JJ	69	8J69
Camira wagon SL/X	8JJ	35	8J35
Camira sedan SL/E	8JU	69	8U69
Camira wagon SL/E	8JJ	35	8J35

*Note: Model group and style numbers may have 3 numbers following. These refer to option packs.

Vehicle dimensions (in millimetres)

ITEM	SEDAN			WAGON		
	SL	SL/X	SL/E	SL	SL/X	SL/E
Length	4377	4399	4399	4323	4345	4345
Width	1668	1683	1683	1668	1688	1688
Height (at kerb weight)	1363	1363	1360	1358	1358	1427
Wheelbase (at kerb weight)	2577	2577	2577	2577	2577	2577
Track (at kerb weight)						
Steel 13"—wheels—Front & Rear	1403	1403		1403	1403	
Alloy 14" wheels—Front & Rear			1403			1403
Turning circle						
Kerb to kerb (metres)	10.3	10.3	10.3	10.3	10.3	10.3
Wall to wall (metres)	10.9	10.9	10.9	10.9	10.9	10.9
Minimum running ground clearance*	126	126	128	127	127	130

*With driver and 3 passengers each 68 kg.

Engine data

Number of cylinders	4
Bore diameter	80 mm
Stroke	79.5 mm
Piston displacement	1.598 litres
Taxable horsepower (RAC or SAE)	15.87
Kilowatts DIN @ rpm	64kW at 5800 rpm
Torque Nm DIN @ rpm	125 Nm at 3800 rpm
Compression ratio	9.2
Octane requirement (research method)	97
Idle speed	850 to 900 rpm
Maximum permissible engine speed, continuous—approx.	6000 rpm
Valve clearance	*
Drive belt: length; width	900 mm; 9.5 mm
Cylinder numbering (from pulley end)	1, 2, 3, 4
Firing order	1, 3, 4, 2
Spark plug gap	0.7—0.8 mm

*Hydraulic valve clearance compensation.

Carburettor mixture

The mixture control of the carburettor has been sealed and the idling speed set to comply with the Australian Design Rules. The reason for this is to conform to anti-pollution measures.

Your GMH Dealer has the full information concerning the foregoing.

Capacities

Engine oil	**Litres**
Service refill	3.0
Add for filter—approx.	0.25
Manual transaxle	
Incl. differential	2.0
Automatic transaxle	
Incl. differential	
Service refill—approx.	5.0
Dry	8.5
Cooling system	
Manual	7.9
Automatic	7.7
Pressure rating of coolant cap	120 kPa
Fuel tank	
All models—approx.	60.0

Wheels and tyres

Model	Wheel	Tyre size	Pressures (kPa)—up to three passengers		Pressures (kPa)—full Load	
		Front	Rear	Front	Rear	
Sedan and wagon SL and SL/X	5.50JJ x 13″ steel	AR78S13 P175/75SR13 BR70H13	193 200 193	193 200 193	221 240 221	221 240 221
Sedan and wagon SL/E	5.50JJ x 14″ Cast alloy	P195/60HR14	200	200	240	240

Refer also to the tyre placard in the glove box.

Wheel bolt torques

Recommended wheel bolt torque is 95-100 Nm.

WARNING: If non standard wheels are fitted to Camira, it is imperative that the new wheels have the same offset as standard wheels to maintain negative scrub radius steering geometry.

Emission control systems

IMPORTANT: This is an explanation of the operation of the emission control systems fitted to your new vehicle.

Introduction

During the combustion process in an automotive engine, some of the fuel (hydrocarbons) fails to burn and is discharged into the engine crankcase or exhaust system. Additional hydrocarbon vapours formed through evaporation of petrol from the fuel tank are trapped in the carbon canister. Of the total hydrocarbons coming from uncontrolled automobiles, about 25% are emitted from the crankcase, 20% from the fuel system and 55% from the engine exhaust.

In addition to hydrocarbons, carbon monoxide and oxides of nitrogen are also formed during the combustion process. These are also discharged into the exhaust system.

Since research on the control of vehicle emissions first began General Motors world-wide resources have developed a number of control systems which are highly effective in reducing undesirable emissions. These systems are discussed in this publication.

Control of hydrocarbon emissions is important since, when subjected to sunlight under certain conditions, they may react with other gases to form photochemical smog. Carbon monoxide does not enter into the complex photochemical smog reaction, but it is itself a pollutant and, thus, has been controlled to prevent high atmospheric concentrations.

There are three areas from which pollutants are emitted on an uncontrolled vehicle:

(a) Exhaust system.

(b) Crankcase.

(c) Fuel system.

A number of modifications have been made by General Motors-Holden's Limited to control the amount of pollutants emitted from your new vehicle.

This handbook will assist you in understanding the control systems by briefly explaining the operation of the various components involved.

Exhaust emissions

The exhaust of a petrol automobile engine contains three significant air pollutants: carbon monoxide, unburned hydrocarbons, and oxides of nitrogen. It also contains small amounts of solid matter—called particulates—made up largely of lead compounds from the tetraethyl lead used to increase the octane rating of petrol.

Exhaust emission control systems

Controlled combustion system (CCS) components

Carburettor

The carburettor has been calibrated to provide a high quality mixture according to engine requirements.

Idle stop solenoid

The idle stop solenoid shuts off the idle air fuel mixture flowing through the mixture by-pass system when the ignition is switched off. This prevents the engine "running on".

Automatic choke

The Varajet II carburettor is equipped with an electrically heated automatic choke. After starting the engine from cold the choke blade is opened progressively by a bi-metal spring electrically heated by two elements. Initially, voltage is applied to one of the two elements in the choke cover. The second element is automatically switched on at a predetermined temperature to cause a more rapid opening of the choke as required during the final stage of the engine warm-up.

Cooling system thermostat

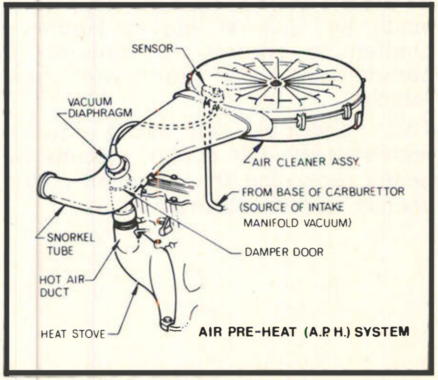
The thermostat opening temperature is calibrated to meet the requirements of the system during engine warm-up.

Air pre-heat (A.P.H.) system

This system provides a supply of pre-heated air to the carburettor until the engine compartment air temperature reaches a pre-set level.

Pre-heated air is supplied from the exhaust manifold heat stove via the hot air duct to the underside of the air cleaner snorkel. A thermal vacuum valve controls the operation of a vacuum motor which operates the control damper assembly, and this regulates the amount of air supplied from the exhaust manifold stove.

The installation of this system ensures better engine response during the engine warm-up period. Also, leaner fuel settings can be used, which assists in reducing engine emissions.


SENSOR
VACUUM DIAPHRAGM
AIR CLEANER ASSY.
FROM BASE OF CARBURETTOR (SOURCE OF INTAKE MANIFOLD VACUUM)
SNORKEL TUBE
DAMPER DOOR
HOT AIR DUCT
HEAT STOVE

AIR PRE-HEAT (A.P.H.) SYSTEM

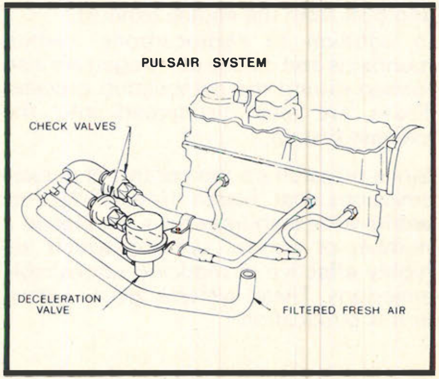
Pulsair system

This system reduces hydrocarbon and carbon monoxide emissions by introducing quantities of air into the hot exhaust gas so that the combustion process can continue in the exhaust system. Filtered air is taken from the air cleaner through check valves which utilize negative exhaust pressure pulsations to induce secondary air flow into the exhaust ports.

Exhaust gas recirculation (EGR)

This system introduces controlled quantities of exhaust gas into the inlet manifold resulting in lower peak combustion temperatures in the com-

PULSAIR SYSTEM

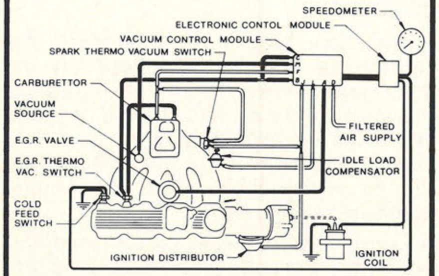

CHECK VALVES
DECELERATION VALVE
FILTERED FRESH AIR

bustion process which, in turn, reduces the formation of nitrogen oxides.

To minimise the effect on driveability and fuel consumption, a control system has been developed which modulates the vacuum signal to the EGR valve according to the engine requirements.

The modulation is achieved by a vacuum bleed system in the vacuum control module so that full EGR only occurs for initial 1-2 seconds of acceleration. After this period, the flow rate is reduced by about 50%. Further to this modulation, there are a number of supplementary controls on the EGR signal for good driveability and economy during warm-up and highway driving.

1. EGR thermo-vacuum switch.
2. Cold feed switch.
3. Speed switch.


SPEEDOMETER
ELECTRONIC CONTOL MODULE
VACUUM CONTROL MODULE
SPARK THERMO VACUUM SWITCH
CARBURETTOR
VACUUM SOURCE
E.G.R. VALVE
E.G.R. THERMO VAC. SWITCH
COLD FEED SWITCH
FILTERED AIR SUPPLY
IDLE LOAD COMPENSATOR
IGNITION DISTRIBUTOR
IGNITION COIL

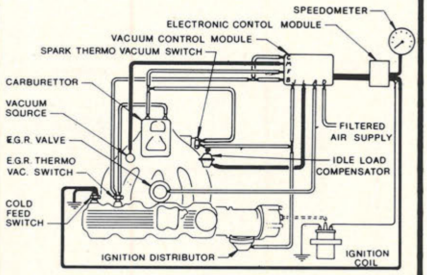
EXHAUST GAS RECIRCULATION

Idle load compensator/throttle positioner

This device performs two separate functions. Firstly it acts as an idle load compensator on all vehicles equipped with automatic transmission and/or air conditioning to prevent an excessive drop in idle speed when the load on the engine increases.

Secondly it acts as a throttle positioner to reduce HC emissions by preventing the throttle closing completely on over-run.

This is controlled by the vacuum and electronic control modules so that the plunger retracts as the engine speed returns to idle to prevent idle "hang-on".

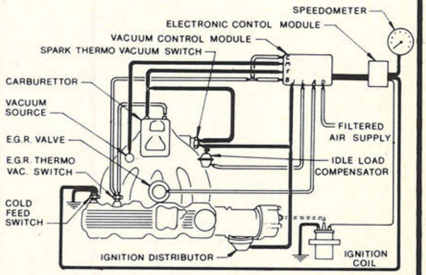

SPEEDOMETER
ELECTRONIC CONTOL MODULE
VACUUM CONTROL MODULE
SPARK THERMO VACUUM SWITCH
CARBURETTOR
VACUUM SOURCE
E.G.R. VALVE
E.G.R. THERMO VAC. SWITCH
COLD FEED SWITCH
FILTERED AIR SUPPLY
IDLE LOAD COMPENSATOR
IGNITION DISTRIBUTOR
IGNITION COIL

IDLE LOAD COMPENSATOR

Spark advance control

The vacuum spark advance signal is taken from a port on the carburettor body which allows advance above idle speed. This signal is then fed into the vacuum control module which in conjunction with the electronic control module provides a series of controls for good driveability and to maintain reduced fuel consumption. These controls include:

1. Spark thermo-vacuum switch.
2. Cold feed switch.
3. Speed switch.
4. Spark delay switch.

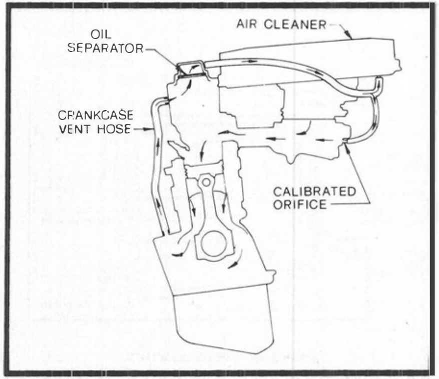

SPEEDOMETER
ELECTRONIC CONTOL MODULE
VACUUM CONTROL MODULE
SPARK THERMO VACUUM SWITCH
CARBURETTOR
VACUUM SOURCE
E.G.R. VALVE
E.G.R. THERMO VAC. SWITCH
COLD FEED SWITCH
FILTERED AIR SUPPLY
IDLE LOAD COMPENSATOR
IGNITION DISTRIBUTOR
IGNITION COIL

SPARK ADVANCE CONTROL

Crankcase emissions

Emission of hydrocarbons from the engine crankcase is another source of automotive air pollution. This emission occurs in the following manner.

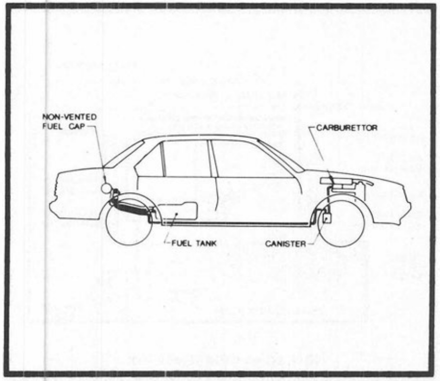
During the combustion process in all petrol engines, some gases escape past the piston rings and into the crankcase. These gases consist largely of unburned fuel. This "blow-by" occurs because of the very high pressures in the combustion chambers.



Crankcase ventilation system

The purpose of this system is to draw blow-by gases out of the crankcase into the intake system and thus recycle them through the combustion process.

Blow-by gases are taken from the crankcase to the camshaft housing where they pass through a mesh oil separator, and then through a hose to the air cleaner. At idle and low speeds when the depression in the air cleaner is not enough to ensure adequate flow of blow-by gases the scavenging is supplemented by a smaller diameter hose leading to a calibrated orifice in the inlet manifold.



Evaporative emissions

Another source of emissions from automobiles is evaporation of petrol. This occurs, not only when the fuel tank is being filled, but at other times, even when the vehicle is not in operation. Special systems to control evaporation are installed on all Camiras.

Evaporative emission control (E.E.C.)

The heart of this system is the canister in the engine compartment, which contains activated charcoal granules.

When the engine is not running, fuel vapours from the fuel tank are prevented from entering the atmosphere by the charcoal in the canister where they are adsorbed.

A vacuum purge line connects the canister to the inlet manifold via the carburettor. When the engine is running the vacuum draws air into the canister, and the absorbed fuel vapour is drawn from the charcoal, forming a mixture with the air which is burnt in the engine combustion process.

A non-vented fuel tank cap is fitted and integral in the cap is a pressure/vacuum relief valve to cater for any differences of pressure or vacuum that may arise.

Maintenance

The required owner emission control systems maintenance operations presented in the owner guide and service manual should be performed by an authorized GMH Dealer or any other qualified service outlet which regularly performs such services.

Vehicle operations

The maintenance instructions contained in this owner guide, are based on the assumption that your vehicle will be used as designed and operated in accordance with the instructions provided in it.

Service replacement parts

The emission control systems of your new vehicle were designed, built and tested using GM parts and the vehicle is certified as being in conformity with Australian Design Rules covering emissions. Accordingly, it is recommended that any replacement parts used for required maintenance services or for the repair of emission control system be new GM parts. Use of replacement parts which are not of equivalent quality may impair the effectiveness of such systems.

Engine identification

The type and capacity of the engine fitted to your new vehicle can be easily identified by the engine number prefix. This is found on the registration label and on the engine block as indicated below.

Engine number

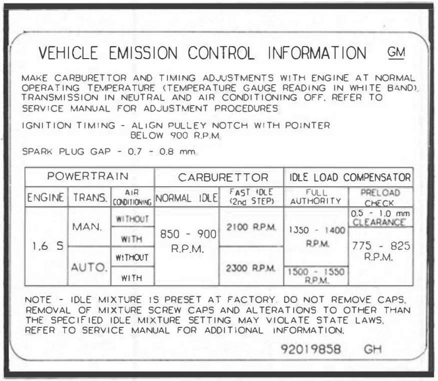
16JH 1.6 litre high compression—domestic.

16SH 1.6 litre high compression—export.

16N 1.6 litre low compression—export.

Vehicle emission control information label

This label is located on the left hand strut tower.



VEHICLE EMISSION CONTROL INFORMATION GM

MAKE CARBURETTOR AND TIMING ADJUSTMENTS WITH ENGINE AT NORMAL OPERATING TEMPERATURE (TEMPERATURE GAUGE READING IN WHITE BAND). TRANSMISSION IN NEUTRAL AND AIR CONDITIONING OFF. REFER TO SERVICE MANUAL FOR ADJUSTMENT PROCEDURES

IGNITION TIMING - ALIGN PULLEY NOTCH WITH POINTER
BELOW 900 R.P.M.

SPARK PLUG GAP - 0.7 - 0.8 mm

POWERTRAIN			CARBURETTOR		IDLE LOAD COMPENSATOR	
ENGINE	TRANS.	AIR CONDITIONING	NORMAL IDLE	FAST IDLE (2nd STEP)	FULL AUTHORITY	PRELOAD CHECK
1.6 S	MAN.	WITHOUT	850 - 900 R.P.M.	2100 R.P.M.	1350 - 1400 R.P.M.	0.5 - 1.0 mm CLEARANCE
		WITH				775 - 825 R.P.M.
	AUTO.	WITHOUT		2300 R.P.M.		
		WITH			1500 - 1550 R.P.M.	

NOTE - IDLE MIXTURE IS PRESET AT FACTORY. DO NOT REMOVE CAPS. REMOVAL OF MIXTURE SCREW CAPS AND ALTERATIONS TO OTHER THAN THE SPECIFIED IDLE MIXTURE SETTING MAY VIOLATE STATE LAWS. REFER TO SERVICE MANUAL FOR ADDITIONAL INFORMATION.

92019858 GH

Service manuals

Service manuals, providing greater detail on emission systems, are available for purchase by owners who desire to perform their own vehicle maintenance.

These are available at current prices from a GMH Dealer or from:

Stan H. Earle Pty. Ltd.,
46 Isabella Street,
Moorabbin 3189
Victoria
Australia

Section 5

Owner relations and GMH Dealers

We want you to be happy with your new Camira and with the people you deal with while you have the vehicle.

Normally, any problems which may arise with the sales transaction, operation or servicing of your vehicle will be handled by your Dealer's Sales and Service department.

We realise however that, with the best intentions, misunderstandings do occur sometimes.

If you have a problem that has not been settled to your satisfaction here's what to do:

Step 1:

Discuss the problem with one of the Dealer's management people. If you feel you haven't got satisfaction from the Sales Manager or Service Manager—go to the General Manager or the Dealer himself.

Step 2:

If it seems that no-one at the dealership can help fully, write to the GMH Zone Owner Relations Manager in your State outlining your problem and including your name, address and telephone number; the vehicle model number and vehicle identification number; the vehicle delivery date and odometer reading and the Dealer's name and address. This information will be on your Vehicle Identification Certificate (inside the front cover).

Step 3:

By now you should have satisfaction. If not, you can write to the GMH National Owner Relations Manager, GMH Sales Pty Ltd, P.O. Box 548D, Melbourne 3001.

Owner Relations Managers

QUEENSLAND
General Motors-Holden's Sales Pty. Ltd.,
Box 728, G.P.O.,
BRISBANE, QLD. 4001.

NEW SOUTH WALES AND AUSTRALIAN CAPITAL TERRITORY
General Motors-Holden's Sales Pty. Ltd.,
Box 481, P.O.,
EDGECLIFF, N.S.W. 2027.

VICTORIA AND TASMANIA
General Motors-Holden's Sales Pty. Ltd.,
Victorian Zone Service Division,
Box 161, P.O.,
DANDENONG, VIC. 3175.

SOUTH AUSTRALIA AND NORTHERN TERRITORY
General Motors-Holden's Sales Pty. Ltd.,
Box 221, P.O.,
ELIZABETH, S.A. 5112.

WESTERN AUSTRALIA
General Motors—Holden's Sales Pty. Ltd.,
P.O. Box 426,
WEST PERTH, W.A. 6005.

Authorised GMH Dealers

(Note: Dealership names and locations listed are effective as at 1/2/83. These may change from time to time without notice)

NEW SOUTH WALES — Metropolitan Dealers

ARNCLIFFE
Suttons Motors (Arncliffe) Pty. Ltd.,
93 Princes Highway

ASHFIELD
Muirs Motors (Ashfield) Pty. Ltd.,
252 Parramatta Road

BALGOWLAH
Ross Hannon Holden
164 Condamine Street

BAULKHAM HILLS
Tony Packard Holden
Cnr. Victoria Avenue & Windsor Road

BELMONT
Young & Green (Belmont) Pty. Ltd.,
444 Pacific Highway

BLACKTOWN
Townsend Motors
125 Main Street

CABRAMATTA
Ron Hodgson Holden
266 Hume Highway

CAMPBELLTOWN
Clintons Motors Pty. Ltd.,
3-17 Queen Street

CARDIFF
Brian Kelly Holden
35-39 Macquarie Road

CHATSWOOD
Sundell Holden
815-843 Pacific Highway

CHULLORA
Suttons Motors (Chullora) Pty. Ltd.,
Cnr. Hume Highway & Waterloo Road

CROW'S NEST
J. N. Caldwell (Holdings) Pty. Ltd.,
1 Alexander Street

DEE WHY
Graham Patching Holden
Cnr. May and Mooramba Roads

GOSFORD
MKL Gosford Motors Pty. Ltd.,
131 Henry Parry Drive

GOSFORD
Noble Motors
Pacific Highway

HORNSBY
John A. Gilbert Pty. Ltd.,
90 Pacific Highway

KINGSFORD
John Pelligrini Holden
263-271 Anzac Parade

KINGSWOOD
W. L. Chapman Pty. Ltd.,
107-119 Gt. Western Highway

LAKEMBA
Nash Holden
1018 Canterbury Road

LIVERPOOL
A. C. McGrath & Company,
Cnr. Castlereagh St. & Hume Highway

LIVERPOOL
Pat Cullen's Garage,
324-360 Hume Highway

MIRANDA
Greg Ball Holden
1-3 Kiora Road

MOSMAN
Norman G. Booth Properties Ltd.,
501 Military Road

NEWCASTLE
Young & Green Pty. Ltd.,
745 Hunter Street

NEWPORT BEACH
Sundell Holden
Barrenjoey Road

PADSTOW
Purnell Bros. Holden
19 Davies Road

PARRAMATTA
Fair Deal Car Sales Parramatta
65 Church Street

PARRAMATTA
Hillsdon's Pty. Ltd.,
87 Church Street

PENNANT HILLS
Les Vagg Holden
351-355 Pennant Hills Road

RANDWICK
Boyded Randwick,
265 Avoca Street

ROCKDALE
C. V. Holland
571 Princes Highway

RYDE
Muirs Motors (Ryde) Pty. Ltd.,
603-605 Victoria Road

ST. MARY'S
Lance Motors Pty. Ltd.,
Corner Glossop & Harris Streets

SPRINGWOOD
Kerry's Motors Pty. Ltd.,
28 Great Western Highway

TORONTO
Young & Green (Toronto) Pty. Ltd.,
Carey Street

WINDSOR
Hawkesbury Valley Motors,
122 George Street.

WARILLA
Wilson's Warilla Pty. Ltd.,
29 Shellharbour Road

WOLLONGONG
Dwyers Pty. Ltd.,
31-33 Crown Street

WOLLONGONG
Boyded (North Wollongong)
Cnr Station & Flinders Streets **Pty. Ltd.,**

WYONG
W. M. Holden
Pacific Highway

NEW SOUTH WALES —

Country Dealers & Service Dealers

Consult your local Yellow Pages under Motor Cars—New for Addresses and Telephone Numbers.

- ADELONG
- ALBURY
- ARMIDALE
- BALLINA
- BARADINE
- BARHAM
- BARRABA

- BATHURST
- BEGA
- BELLINGEN
- BLAYNEY
- BOMBALA
- BOURKE
- BOWRAL
- BREWARRINA
- BROKEN HILL
- CANOWINDRA
- CASINO
- COBAR
- COFF'S HARBOUR
- CONDOBOLIN
- COOLAMON
- COOMA
- COONABARABRAN
- COONAMBLE
- COOTAMUNDRA
- COROWA
- COWRA
- CROOKWELL
- CULCAIRN
- DENILIQUIN
- DORRIGO
- DUBBO
- DUNGOG
- EDEN
- FINLEY
- FORBES
- GILGANDRA
- GLEN INNES
- GLOUCESTER
- GOULBURN
- GRENFELL
- GRIFFITH
- GULARGAMBONE
- GUNDAGAI
- GUNNEDAH
- GUNNING
- GUYRA
- HARDEN
- HAY
- HOLBROOK
- INVERELL
- JERILDERIE
- JUNEE
- KANDOS
- KATOOMBA
- KEMPSEY
- KIAMA
- KURRI KURRI
- KYOGLE
- LEETON
- LISMORE
- LITHGOW
- MACKSVILLE
- MAITLAND
- MILTON
- MOLONG
- MOREE
- MORUYA
- MOSS VALE
- MUDGEE
- MULLUMBIMBY
- MUNGINDI
- MURWILLUMBAH
- MUSWELLBROOK
- NARRABRI
- NARRANDERA
- NARROMINE
- NOWRA
- NYNGAN
- ORANGE
- PARKES
- PEAK HILL
- PORT MACQUARIE
- QUIRINDI
- TAMWORTH
- TAREE
- TEMORA
- TENTERFIELD
- TOTTENHAM
- TULLAMORE
- TUMBARUMBA
- TUMUT
- TWEED HEADS
- WAGGA
- WALCHA
- WALLA WALLA
- WALGETT
- WARIALDA
- WARREN
- WAUCHOPE
- WELLINGTON
- WEST WYALONG
- WINGHAM
- WOODENBONG
- YASS
- YOUNG

VICTORIA — Metropolitan Dealers

BENTLEIGH
Boyanton Holden
280 Centre Road

BERWICK
Ross Holden
Princes Highway

BRAYBROOK
Kevin Dennis Holden
272 Ballarat Road

BUNDOORA
Tony Davies Holden
413 Grimshaw Street

BURWOOD
Dustings Hillyer Holden
1200 Toorak Road

CAULFIELD
Booran Holden
1049 Glenhuntly Road

CHELSEA
Harrison Holden
370 Nepean Highway

CHELTENHAM
Balmoral Holden
1212 Nepean Highway

DANDENONG
Graeme Blanchard Holden
Princes Highway

DONCASTER
Lance Dixon Holden
601 Doncaster Road

ELSTERNWICK
Reg. Hunt Motors Pty. Ltd.,
77 Nepean Highway

ESSENDON
Preston Motors (Essendon) Pty. Ltd.,
201-211 Keilor Road

FAWKNER
M. & G. Mantello Holden
1263 Sydney Road

FERNTREE GULLY
Neilson Holden F.T.G.,
980 Burwood Road

FOOTSCRAY
Alan Mance Holden
435 Barkly Street

FRANKSTON
Bayside Holden
140 Dandenong Road

GEELONG
R. & B. Smith Pty. Ltd.,
510 Moorabool Street

GEELONG
Winter & Taylor (Sales) Pty. Ltd.,
23 Cavendish Street

GLEN WAVERLEY
Geoff Brady Holden
565-577 Springvale Road

HASTINGS
McRae Motors Pty. Ltd.,
762 Flinders Road

HEIDELBERG WEST
Arthur Ellis Holden
66 Bell Street

LILYDALE
Noel Dight Holden
Main Street

MORNINGTON
Peninsula Holden
Cnr Nepean Highway & Tyabb Road

OAKLEIGH
Garry & Warren Smith Pty. Ltd.,
1575 Dandenong Road

PRESTON
Graham Hunt Holden
518 High Street

RINGWOOD
Bill Patterson Holden
45-57 Maroondah Highway

SOUTH MELBOURNE
John Martin Holden
132 Sturt Street

WERRIBEE
Ballan Holden
Princes Highway

WEST MELBOURNE
Reg Hunt Holden
577 King Street

VICTORIA — Country Dealers & Service Dealers

Consult your local Yellow Pages under Motor Cars—New for Addresses and Telephone Numbers.

- ALEXANDRA
- ARARAT
- BACCHUS MARSH
- BAIRNSDALE
- BALLARAT
- BENALLA
- BENDIGO
- BIRCHIP
- BOORT
- CAMPERDOWN
- CASTERTON
- CASTLEMAINE
- CHARLTON
- COBRAM
- COHUNA
- COLAC
- COLERAINE
- CORRYONG
- DAYLESFORD
- DERRINALLUM
- DIMBOOLA
- DONALD
- DROUIN
- ECHUCA
- EUROA
- FOSTER
- HAMILTON
- HEATHCOTE
- HOPETOUN
- HORSHAM
- KANIVA
- KERANG
- KOOWEERUP
- KORUMBURRA
- KYABRAM
- KYNETON
- LEONGATHA
- MAFFRA
- MANSFIELD
- MARYBOROUGH
- MILDURA
- MINYIP
- MORTLAKE
- MORWELL
- MURRAYVILLE
- NAGAMBIE
- NHILL
- NULLAWIL
- NYAH
- ORBOST
- OUYEN
- PORTLAND
- QUAMBATOOK
- RAINBOW
- ROCHESTER
- RUTHERGLEN
- SALE
- SEA LAKE
- SEYMOUR
- SHEPPARTON
- ST. ARNAUD
- STAWELL
- SWAN HILL
- TALLANGATTA
- TIMBOON
- TRARALGON
- UNDERBOOL
- WANGARATTA
- WARBURTON
- WARRACKNABEAL
- WARRNAMBOOL
- WODONGA
- WONTHAGGI
- WYCHEPROOF
- YARRAM
- YARRAWONGA

AUSTRALIAN CAPITAL TERRITORY

BELCONNEN
John Wright Holden
Josephson Street

BRADDON
Beazley & Bruce (ACT) Pty. Ltd.
44 Mort Street

PHILLIP
Commonwealth Motors Pty. Ltd.
158 Melrose Drive

QUEENSLAND — Metropolitan Dealers

ASPLEY
Zupps (Aspley) Pty. Ltd.,
1442 Gympie Road

CLEVELAND
Russell Smith Holden
Cnr Queen & Doig Streets

MOOROOKA
John Sivyer Holden
1060 Ipswich Road

MT. GRAVATT
Zupps Motors Pty. Ltd.,
1310 Logan Road

NEWSTEAD
Eagers Retail Pty. Ltd.,
95 Breakfast Creek Road

NUNDAH
Eagers (Northside)
1319 New Sandgate Road

PETRIE
North Pine Motors Pty. Ltd.,
Gympie Road

REDCLIFFE
Village Holden
425 Elizabeth Avenue

SPRINGWOOD
Midways Holden
Pacific Highway & Brennan St.

SALISBURY
Centenary Holden
35 Moggill Road

WINDSOR
Leach Motors
146 Newmarket Road

WOOLOONGABBA,
Eagers (Southside),
40 Logan Road

WYNNUM
Doug Barton Holden
200 Tingal Road

QUEENSLAND — Country Dealers & Service Dealers

Consult your local Yellow Pages under Motor Cars—New
for Addresses and Telephone Numbers.

- ATHERTON
- AUGATHELLA
- AYR
- BEAUDESERT
- BEENLEIGH
- BEERWAH
- BILOELA
- BOWEN
- BUNDABERG
- CABOOLTURE
- CAIRNS
- CALOUNDRA
- CHARLEVILLE
- CHARTERS TOWERS
- CLERMONT
- CLONCURRY
- CUNNAMULLA
- DALBY
- DIRRANBANDI
- EMERALD
- GATTON
- GAYNDAH
- GLADSTONE
- GOONDIWINDI
- GYMPIE
- INGHAM
- INNISFAIL
- IPSWICH
- JULIA CREEK
- KILCOY
- KINGAROY
- LAIDLEY
- LONGREACH
- MACKAY
- MAREEBA
- MARYBOROUGH
- MILES
- MONTO
- MOURA
- MT. ISA
- MURGON
- NAMBOUR
- NANANGO
- PROSERPINE
- QUILPIE
- ROCKHAMPTON
- ROMA
- SOUTHPORT
- SPRINGSURE
- STANTHORPE
- ST. GEORGE
- TARA

- TOOWOOMBA
- TOWNSVILLE
- TULLY
- WARWICK
- WINTON

ALLEN CHARLESWORTH
PARTS MANAGER
08 47 3855

SOUTH AUSTRALIA — Metropolitan Dealers

ADELAIDE
City Holden,
203-221 Grenfell Street

ELIZABETH
Peter Page Holden
Elizabeth Way

GLENELG
John H. Ellers Pty. Ltd.,
282 Brighton Road

MALVERN
Claridge Motors Pty. Ltd.,
361-367 Unley Road

MILE END
United Motors Retail
71 West Beach Road

PORT ADELAIDE
Smith Motor Co. Pty. Ltd.,
171 Commercial Road

VALLEY VIEW
Plaza Holden
817 839 North East Road

SOUTH AUSTRALIA — Country Dealers & Service Dealers

Consult your local Yellow Pages under Motor Cars—New for Addresses and Telephone Numbers.

- BALAKLAVA
- BERRI
- BURRA
- CEDUNA
- CLEVE
- CRYSTAL BROOK
- CUMMINS
- GLADSTONE
- JAMESTOWN
- KADINA
- KEITH
- KINGSCOTE
- KINGSTON
- LAMEROO
- LOXTON
- MAITLAND
- MALLALA
- MENINGIE
- MILLICENT
- MINLATON
- MT. BARKER
- MT. GAMBIER
- MURRAY BRIDGE
- NARACOORTE
- ORROROO
- PETERBOROUGH
- PORT AUGUSTA
- PORT LINCOLN
- PORT PIRIE
- QUORN
- RENMARK
- STRATHALBYN
- TANUNDA
- WAIKERIE
- WHYALLA
- WUDINNA
- YANKALILLA

WESTERN AUSTRALIA — Metropolitan Dealers

CANNINGTON
Brian Gardner Holden
1308 Albany Highway

FREMANTLE
Shack Motors
64 Queen Victoria Street

GOSNELLS
Lance Gibbons Holden
2325 Albany Highway

MELVILLE
Melville Motors Pty. Ltd.,
532-536 Canning Highway

MIDLAND
John Goldie Holden
161 Great Eastern Highway

MORLEY
Metro Motors Pty. Ltd.,
212 Walter Road

NAVAL BASE
Shack Motors Cockburn Pty. Ltd.,
Rockingham Road

OSBORNE PARK
North City
Cnr. Scarborough Beach Rd.
& Harbourne Street

PERTH
City Motors
505 Newcastle Street

VICTORIA PARK
Young's Holden
529 Albany Highway

WANNEROO
Phoenix Holden
316 Berriman Drive

WESTERN AUSTRALIA— Country Dealers & Service Dealers

Consult your local Yellow Pages under Motor Cars—New for addresses and Telephone Numbers.

- ALBANY
- BEVERLEY
- BOYUP BROOK
- BROOKTON
- BRUCE ROCK
- BUNBURY
- BUSSELTON
- CARNARVON
- COLLIE
- CORRIGIN
- CRANBROOK
- DALWALLINU
- ESPERANCE
- GERALDTON
- GNOWANGERUP
- GOOMALLING
- KALGOORLIE
- KATANNING
- KELLERBERRIN
- KUNUNURRA
- MANDURAH
- MANJIMUP
- MERREDIN
- MOORA
- MORAWA
- NAREMBEEN
- NARROGIN
- NORTHAM
- PINGELLY
- PORT HEDLAND
- QUAIRADING
- WAGIN
- WYALKATCHEM

TASMANIA — Metropolitan & Country Dealers & Service Dealers

HOBART
Motors Pty. Ltd.,
179 Macquarie Street

BURNIE
Motors Pty. Ltd.,
84-89 Marine Terrace

DEVONPORT
Motors Pty. Ltd.,
628 Victoria Parade

KING ISLAND
King Island Motors Pty. Ltd.,
Netherby Road, Currie

LAUNCESTON
Motors Pty. Ltd.,
165 Brisbane Street

SMITHTON
Motors Pty. Ltd.,
16 Nelson Road

ULVERSTONE
Motors Pty. Ltd.,
99 Reibey Street

NORTHERN TERRITORY — Dealers

ALICE SPRINGS
Kittle Bros. (Alice Springs) Pty. Ltd.,
Cnr Wills Terrace & Railway Terrace

DARWIN
Suttons Motors (Darwin) Pty. Ltd.,
Cnr. Mitchell and Knuckey Streets

Section 6

Appearance, maintenance and service

Paintwork

The paint on your Camira is finished in acrylic lacquer and will stay bright and new-looking provided you wash it regularly, using approved products. Weekly washing is recommended if the vehicle is being used constantly or if it is not parked under cover.

Before you wash the paintwork, thoroughly wash in and around the front and rear windows and check that door drain holes and rocker sill vents are clean. Hose off any heavy dirt on the glass, but leave final cleaning of the glass until last.

Washing tips

Use either cold or warm water—preferably running.

Use clean chamois cloths, sponges or rags (old, clean linen is better than new material for glass).

Don't wash your vehicle in bright sunlight—it will streak.

Grease and oil can be removed with a little kerosene or white spirits. Flush with water afterwards.

If petrol is spilled during refilling, flush with water immediately.

Be sure that your cleaner, polish or wax is suitable for acrylic finishes. AC Delco Wash and Wax from your GMH Dealer is highly recommended.

AC-4
Glass Cleaner
Optikleen
Tyre Black
Velour Fabri
Vinyl Clea
Synthetic Chamois
Degreaser
Wash and Wax
abric
uard
Polishing Cream
Liquid Silicon Polish
Demister Cloth
Engine Cooling System Corrosion Inhibitor
Vinyl and Rubber Conditioner

Insect spots can be removed with a mixture of 220 grams of baking soda in 2 litres of water. Flush clean afterwards. New tyre look can be restored with AC Delco Tyre Black from your GMH Dealer.

Tarnished chrome responds well to AC Delco Polishing Liquid.

Cleaning of interior

Care and cleaning of upholstery

Dust and dirt particles which accumulate on the surface of the interior trim should be removed every few weeks—more often with constant hard driving. This can be done readily with a vacuum cleaner. Before attempting to remove spots and stains from an upholstery fabric, it is necessary to determine as accurately as possible:

1. The type of fabric (cord and velour—polyester; tweed—woolblend).
2. The nature and age of the stain.
3. The effect of the stain removal agent upon the colour, structure and general appearance of the trim material.

It is essential that stains be removed from the trim material as soon as possible after they have been made. If they are allowed to remain on the fabric for any length of time they very often become oxidised or set, and removal becomes difficult, if not impossible.

Cleaning upholstery

The use of AC Delco Velour Fabric and Vinyl cleaner will assist in the above.

After cleaning, or better still before using the vehicle, apply AC Delco Fabric Guard to maintain a fresh clean appearance and to protect the upholstery from further dirt.

Cleaning carpets

Thoroughly brush or vacuum the carpet. In many instances the carpet may require no further cleaning. If the carpet is extremely soiled, thoroughly vacuum it to remove loose dirt; then using AC Delco Velour Fabric and Vinyl Cleaner, clean approximately one square foot at a time. After each area is cleaned, remove as much of the cleaner as possible with a vacuum cleaner. After cleaning the carpet, use an air hose to fluff the carpet pile, then dry the carpet. After the carpet is completely dried, use an air hose to again fluff the carpet pile.

Cleaning seat belts

Cleaning of the seat belts can be carried out by using a mild non-abrasive soap and lukewarm water. After washing be sure to thoroughly sponge the washing solution out of the belts.

CAUTION: Do not bleach or dye belts since this may severely weaken them.

Cleaning P.V.C. coated fabrics

Vinyl (P.V.C.) coated fabrics are used for seating, headlining and auxiliary trimming. The grades used vary according to their function. P.V.C. fabrics are generally made with fabric bases upon which synthetic resins are applied. Care of P.V.C. fabrics is a relatively simple but important matter. The surface should be wiped over with a dry cloth during the regular cleaning of the vehicle. Should dirt accumulate and become embedded in the material pattern the following procedure is recommended:

1. Using luke warm water and soap, work up thick suds on a piece of cheesecloth, and apply to the surface. A soft bristle brush can be used to advantage to remove stubborn stains or dirt embedded in the grain of the material.
2. Repeat using only a damp cloth and no soap.
3. Wipe dry with a soft cloth.

The above cleaning instructions apply to the rubber floor mats.

Cleaning cloth trim material

Where the seats in your vehicle are upholstered with cloth, the following instructions should be observed. Most loose dirt and dust can be removed by a vacuum cleaner or a soft brush. Do not use a whisk broom or a coarse hair brush. If normal soiling should take place, it is recommended that the fabric be sponged lightly with warm water containing a detergent and a small amount of ammonia. The fabric should then be rubbed lightly, and if necessary, sponged again to remove anything stubborn. Soak up excess fluid with dry cloth. AC Delco Velour Fabric and Vinyl Cleaner may be used to advantage, but should be used sparingly.

Cleaning ash trays

Insert type

To remove, open the lid of the ash tray and use the lid to pull out the ash tray complete. The tray can then be emptied and cleaned. To replace, reverse the procedure.

Cleaning glass

Glass

The interior glass area of the vehicle should be cleaned using AC Delco Glass Cleaner with a clean soft cloth.

Care must be taken when cleaning inside the rear window so as not to damage the heating element.

CAUTION: Many cleaners may be toxic or flammable, or may cause damage to the interior. When cleaning the interior, do not use volatile cleaning solvents such as acetone, lacquer thinners, enamel reducers, nail polish removers; or such cleaning materials as laundry soaps, bleaches or reducing agents. Never use carbon tetrachloride, petrol or naphtha for any cleaning purpose.

IMPORTANT: Be sure the vehicle is well ventilated while using any cleaning agents. Follow the manufacturer's recommendations when using such products.

Cleaning of exterior

Preliminary steps

CAUTION: Care should be used when moving the vehicle after washing, in case water has affected the brakes.

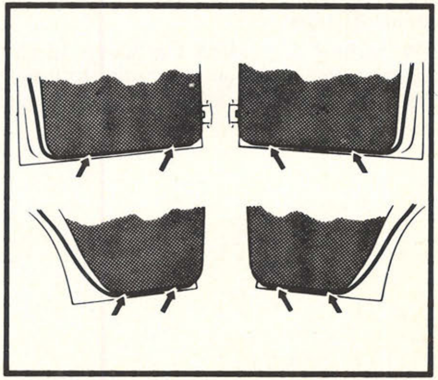
Frequent hosing and washing of the vehicle cannot be overstressed as the most effective precaution against corrosion. Other items requiring attention before washing the vehicle are as follows:

1. Underbody cleaning

The effects of salts and other corrosive materials from road surfaces can result in accelerated rusting and deterioration of underbody components such as brake and fuel lines, frame, underbody floor pan, exhaust system, brackets, parking brake cables. These corrosive effects, however, can be reduced by periodic hosing of the underbody with plain water whenever the vehicle is being washed. In geographic areas having a heavy concentration of corrosive materials it is recommended that the complete underbody be inspected and washed at least once each year, preferably after a winter's exposure. Particular attention should be given to cleaning out underbody members where dirt and other foreign materials may have collected.

2. Door drain holes

It is important that the drain holes at the bottom of the door panels are checked to make sure that they are free of dirt and foreign matter, which could trap water inside the panels. Clogged drain holes can be cleaned with a small screwdriver and these drain holes are angled back towards the rear of the vehicle. (Refer illustration below.)



3. Rocker sill vents

In all models there are vents which should be regularly checked to see that they are clear of blockage, using a blunt ended instrument.

Glass

Special care should be taken to avoid scratching the glass when it is being cleaned. If it is cleaned at the same time as the rest of the vehicle, there is a possibility that particles of grit will cause fine scratches. An accumulation of these on the windshield can make night driving very unpleasant. Flush off any heavy mud deposits on the glass when washing the body, but leave the final cleaning and polishing until afterwards. Use AC Delco Glass Cleaner and wash each section of glass in turn, making sure that the water, its container and the sponge are quite clean and free from grit. Clean old linen cloth is better than new material for polished glass.

By adding AC Delco Optikleen to the windscreen washer reservoir you will help the wipers to keep the windscreen sparkling clean.

Insect spots

Insect spots on the paint finished parts of the vehicle can be easily washed off by using a solution containing 2 litres of water in which approx. 220 grams of baking soda (Bicarbonate of Soda) has been dissolved. Flush the washed parts with clean water. After washing and drying, park the vehicle in a shaded area.

Washing

The acrylic lacquer finish on your vehicle is superior to ordinary lacquers and will stay bright and new looking for years with little or no polishing, provided it is given a reasonable amount of regular washing to keep off road grime.

To preserve the original paint finish of the vehicle, it is essential that it is kept clean by frequent washing. Washing not only removes dirt and road grime that settles on the vehicle, but also dilutes acids which accompany such grime, in particular, salt from air or sea spray encountered in coastal areas which often becomes trapped in crevices. Tree sap, road tar, excretion from insects and industrial fall out often contain harmful chemicals and other foreign matter that may permanently damage the paint finish of the vehicle. These should be removed without delay, using an effective removal agent.

Regular washing

If the vehicle is in continuous use, it should be washed at least once a week with either cold or warm water (preferably running water), using clean chamois leathers, sponges or rags free from dirt or grit likely to scratch the paint finish. It is good practice to first hose the vehicle to remove as much of the grit and grime as possible before swabbing the surface. Do not wash the vehicle under bright sunlight when high temperatures are being experienced, as this will result in a streaky, watermarked finish.

AC Delco Wash and Wax loosens road grime to make washing easier and leaves paint shining clean.

NOTES:

1. Calcium chloride and other salts, road oil and tar, tree sap, industrial fallout and other foreign matter may damage any known automobile finish if allowed to remain in contact with the paint film.

2. Some chemical cleaners used for removing road oils and tars from painted surfaces have been found to be detrimental to acrylic finishes. When purchasing a cleaner, polish or wax, ensure that it can be safely used on an acrylic finish.

3. Grease and oil, and even tar if it's fresh, can be removed from the finish with a little kerosene or white spirits. As a precaution against staining, wash and polish as soon as possible the area from which the foreign matter has been removed.

IMPORTANT: If petrol is spilt on the paint finish when refilling, owners are advised to ensure that it is flushed off with clean water immediately. The reason is that petrols currently in use have a tendency to stain or soften new paint finish during the weathering out period, particularly when the vehicle is exposed to high temperatures.

Paint work inspection

Regular inspection of the vehicle should be made for scratch marks, cracks or damaged areas, all of which could develop rust and thus affect paint finish. Any deep scratches, cracks or breakdown in the finish should be repaired without delay. Care should be taken to ensure that any rusting is counteracted immediately, otherwise rust "creep" will extend beyond the damaged area. This applies particularly in sub-tropical areas or coastal districts, where the moist or salt-laden atmosphere accelerates rusting if it is allowed to develop through neglect. The paint finish of the vehicle gives a very high degree of protection against the weather, but it should be realised that wear and deterioration occur when the vehicle is exposed to elements for prolonged periods.

The vehicle therefore should be garaged whenever possible.

Chromium plated parts

Generally, a rub with a clean soft cloth will be all that is necessary to remove dust from the chromium plated parts. However, if the chromium is covered with dead insects or mud, it should be washed with warm soapy water and then cleaning with AC Delco Polishing Liquid. This polish should also be used if the chromium shows signs of tarnishing. Do not use ordinary metal polishes as they may contain abrasives which would damage the plating.

Polishing

Even though the acrylic lacquer finish on your vehicle is more durable than ordinary lacquers, under certain conditions you may wish to polish your vehicle to provide maximum protection against road dirt and industrial fall out, etc. Also, the application of a polish may be required to remove foreign matter which is not normally removed from vehicles by washing. Over a period of time, such foreign matter may build up on the paint surface to the detriment of its overall appearance.

Do not attempt to apply a polish without first washing to remove existing loose grit, surface dirt, dust or grease, etc.

Either AC Delco Liquid Silicon Polish or AC Delco Polishing Cream will quickly and easily impart a deep, rich shine when used as directed.

Do not use polish on the plastic bumper fascia, as this may lead to scratching of the surface or unsightly entrapment of polish residue in the grained finish.

Use mild soap or detergent and water.

Tyres

Sponging with cold water is all that is necessary for normal cleaning of the tyres. Oil and grease can, and should, be removed with soap and water or detergent. For tar or other substances, a mild abrasive, such as mechanics' hand soap or kitchen cleaning powder, may be used if necessary, thoroughly wash the tyres with water to finish. Petrol must not be used for cleaning tyres.

New tyre look can be restored by using AC Delco Tyre Black.

To protect and preserve your dashboard, steering wheel, vinyl upholstery, tyres and protection strips use AC Delco Vinyl and Rubber Conditioner.

AC Delco Degreaser will help to keep your engine clean.

GMH QUALITY SERVICE & PARTS

Replacement Parts and Accessories

GM Parts and Accessories Division of General Motors-Holden's Limited is established to distribute GM Parts and Accessories through Authorized Dealers.

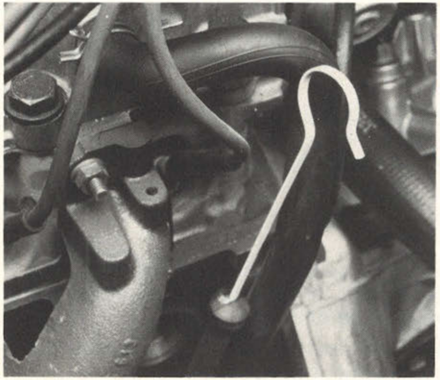
GM Parts and Accessories are manufactured to the high standards of quality established for General Motors-Holden's vehicles—to the correct specifications and of the same materials as the original parts on your vehicle. They are, therefore, warranted, and it is definitely in your interest to specify these quality parts and accessories.

Engine oil

CAUTION: As with any machinery, extreme care should be taken when carrying out any inspection or maintenance job. If you have any doubts about your own ability, please have the job done by a qualified mechanic.

Initial oil fill

A high quality SF oil was installed in your engine at the factory. It is not necessary to change this factory-installed oil prior to the recommended normal change period. However, check the oil level more frequently during the running-in period since higher oil consumption is normal until the piston rings become seated.

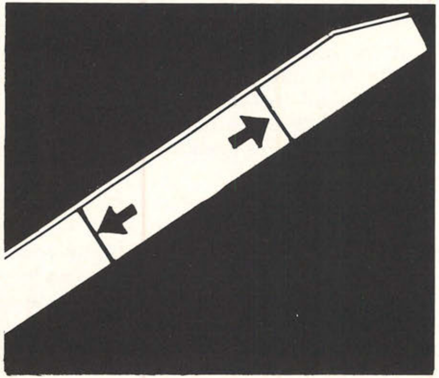


NOTE: Non-detergent and other low quality oils are specifically not recommended. Only the use of SF engine oils and proper oil and filter change intervals assure you of continued proper lubrication of the engine.

Maintaining oil level

The oil level indicator is marked with two lines. The oil level should be maintained between the two markings, neither going above the top marking nor under the bottom marking. Check the oil level frequently and add oil when the level falls to the "bottom" marking.

To check the oil level accurately, the vehicle must first be on level ground and the engine should be stopped for at least ten minutes. Checking the oil level too soon after stopping the engine will not allow sufficient time for oil, which has circulated to the upper parts of the engine, to drain back into the engine oil pan, and consequently, a false low reading will be obtained. Topping up under these conditions will result in the oil pan being over-filled.



Remove the indicator, wipe it clean with clean cloth or paper before reinserting it firmly. Pause for a second then withdraw the indicator to check the reading of the oil level.

The distance between the TOP and BOTTOM marks represent approximately 0.75 litre.

Do not overfill.

Oil consumption

In many cases, it is erroneously thought that engines should not use any noticeable amount of oil between oil changes. In actual fact every internal combustion engine should use a certain amount of oil to act as a lubricant and cooling agent especially during the running-in period.

There are several factors that contribute to oil consumption, apart from mechanical malfunction, that should be noted, and these are: the type of oil, the seating of piston rings, the oil level, and the conditions under which the vehicle is operated.

Running-in

The initial factory-fill oil should remain in the engine for the recommended period. (Refer this section.) Oil consumption may be high during the running-in period.

Lubrication

An engine is dependent on oil to lubricate the cylinder walls, pistons, rings and valve stems. A film of oil is left on the cylinder walls and burned on the next firing stroke while the film on the valve stems is drawn into the combustion chamber and burned. These quantities, while small, explain why an engine does use some oil.

Oil level

Maintaining a proper oil level is also an important factor in controlling oil consumption. An overfull crankcase allows the reciprocating parts of an engine to splash oil on to the cylinder walls in quantities greater than the piston rings can control. This excess oil may be drawn into the combustion chambers and burned.

Overfilling the crankcase can result if the oil level indicator markings are not understood. (Refer to previous notes.)

Dilution

Probably the most prevalent complaint of oil consumption comes from the motorist whose vehicle is frequently driven at below normal operating temperatures. The oil becomes diluted by fuel and moisture which settle in the crankcase, raising the oil level and creating a false reading on the oil level indicator. For example, in a vehicle that has accumulated 1500 kilometres of short distance or intermittent city operating and has consumed a normal amount of oil, the level may not have dropped from the FULL mark, due to dilution. If this vehicle is then driven for some distance at highway speeds on a warm day, the dilution elements evaporate, lowering the oil level and the motorist assumes the oil is being lost as consumed in the highway operation.

Speed consumption

Sustained high engine speeds will increase oil consumption because higher speeds increase engine temperatures which lower oil viscosity and allow more oil to reach the combustion chamber.

If it is considered that the above possibilities can be accounted for but excessive oil consumption appears to continue, then it is recommended that you discuss the situation with a GMH Dealer.

NOTE: Non-detergent and other low quality oils are specifically not recommended. The use of break-in oils, tune-up compounds, friction-reducing compounds and other supplemental additives are not recommended

REMINDER: The use of proper engine oils and observing oil change intervals are your best assurance of continued reliability and performance from the engine of your vehicle.

In the event of an operational problem, consult your GMH Dealer for advice before using supplemental additives.

Oil filter replacement

The full-flow oil filter, filters all the engine oil delivered by the oil pump. For this reason the interval of filter change is very important.

The oil filter should be replaced every six months or 10,000 kilometres whichever occurs first, independent of oil change intervals.

Under prolonged dusty driving conditions it is recommended that the oil filter be replaced more often.

NOTE: After the oil filter has been replaced, an additional 0.25 litres of oil must be added.

Always use AC brand of oil filters, for replacement purposes.

Oil change intervals

The amount of time between changes depends a lot on what you use the car for, and where it is driven.

The table indicates oil change intervals for cars used normally.

If you usually drive on dusty roads; or if you only use your car for short trips of up to 10 kilometres, you will need to change the oil more often—say every 3 months or every 5,000 kilometres.

NORMAL OPERATING CONDITIONS

Prevailing daytime temperatures	Regular oil change interval
ABOVE 10°C	EVERY 6 MONTHS OR 10,000 KM —WHICHEVER OCCURS FIRST
BELOW 10°C	EVERY 1 MONTH OR 5000 KM —WHICHEVER OCCURS FIRST

It is recommended that you see your GMH Dealer for advice on the frequency of oil and filter changes under unusual driving conditions.

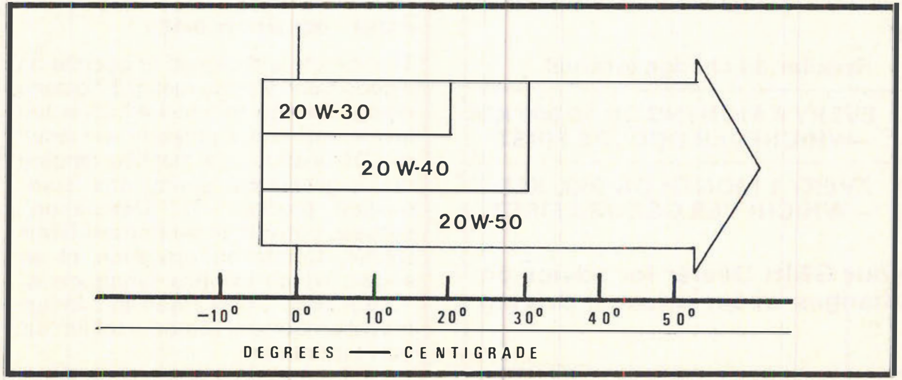
Fuel requirements

The vehicle is designed to operate on a good quality clean fuel of 97 octane rating. The use of a fuel which is too low in anti-knock property will result in "Detonation" (a metallic rapping noise generated during the combustion process). If "Detonation" persists, consult an authorised GMH Dealer. Continued operation of an engine which exhibits symptoms of "Detonation", may result in damage for which General Motors-Holden's is not responsible.

Engine oil grades

The API grade of the crankcase oil used should be SF, and its viscosity should be selected to give the best performance for the climatic and driving conditions under which the vehicle is driven. When the crankcase is drained and refilled, the oil viscosity should be selected for the temperature range anticipated for the period during which the oil will be used.

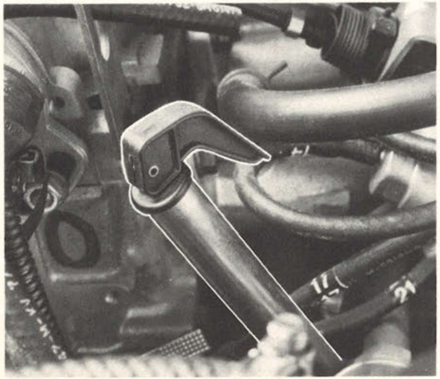
During hot weather, an oil which will provide adequate lubrication under high operating temperatures is required and in the cold, one which will permit easy starting at the lowest temperature likely to be encounted.



Transaxle lubricants

Manual transaxle

Check the oil level every six months or 10,000 kilometres whichever comes first—and add oil to the level of the plug hole if necessary. (The plug is located on transmission mounting face at rear of right hand drive shaft.) The oil should be changed at the six months or 10,000 service, then every two years or 40,000 kilometres.



Automatic transaxle

To ensure proper functioning, efficiency and durability of the automatic transaxle it is of the utmost importance that the fluid is always kept at the proper level. The level must be checked at the intervals specified in the Maintenance section.

Cleanliness must be exercised during checking and refilling since dirt particles entering the automatic transaxle could cause severe malfunction. Always use a clean, non-fluffy cloth to wipe the dipstick.

Use only DEXRON ® products. These are available from your GMH Dealer.

To check the fluid level

Apply the parking brake, place the shift lever in PARK and leave the engine running while you check the dip stick.

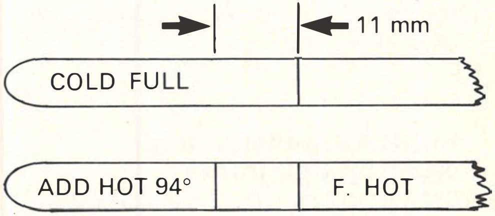
With a cold transaxle—the check must be performed after the engine has been allowed to idle for one minute and not longer than two minutes. To check the level, withdraw the dipstick, wipe it clean, insert it as far as it will go and then remove it. The correct level is between the mark and 11 mm below the mark on the side of the dipstick marked "COLD FULL". If the level is below this range add 0.25 to 0.50 litres.

With a hot transaxle the fluid level is read off the other side of the dipstick marked "ADD HOT 94°". In this case the oil level must, for design-related reasons, be lower than for the cold transaxle. The correct level is between the two marks. The topping-up quantity between these marks is 0.5 litres.

If it has been necessary to add fluid repeatedly, have the transaxle checked by your GMH Dealer to determine the cause.

Transaxle fluid should be changed every two years or 40,000 km.

This interval should be halved for heavy usage.



Servicing

As all adjustments, cleaning and servicing of automatic transaxle requires specialised equipment and knowledge it is recommended that these operations be performed by an authorised GMH Dealer.

Lubricants and filters

Engine oil

Use oil to API SF specifications. (Refer page 94 for viscosity, grades and application.)

Manual transaxle lubricant

Use oil to GMH specification HN1820 (coloured blue).

Automatic transaxle fluid

*DEXRON automatic transaxle fluid only, identified also by Part No. 9985286 should be used for topping up or service refills.

*DEXRON is a registered trademark of General Motors.

Front suspension and steering ball joints

GMH HN12/1 (No. 2 Lithium grease with 10% Molybdenum Disulphide).

Rear wheel bearings

Grease to HN1227 specification.

Brake fluid

Fluid to HN1796 specification.

Control systems

Brake and clutch pedal pivots, clutch linkage, parking brake system, pivot and guides. Grease to HN1271 specification. Accelerator pivots and cable ball sockets, auto transaxle control linkages—grease to HN1416 specification.

Body

Normal use of a vehicle causes metal-to-metal movement at certain points in the body such as hood, rear compartment lid, door hinges, door locks, etc. Noise, excessive wear and improper operation at these points will result when a protective film of lubricant is not provided. Servicing and lubrication should be an integral part of the lubrication service and should be checked out as required every 6 months or 10,000 kilometres.

Powdered graphite

(Apply through key aperture.)

Door lock cylinder.

Instrument panel compartment lock cylinder.

Rear compartment lid lock cylinder.

Tailgate lock cylinder.

Non-staining grease or zinc oxide grease

(Use sparingly on parts likely to be contacted by clothing.)

Engine hood catch and lock.

Rear compartment hinges.

Engine hood and door hinges.

Tailgate hinges.

Solidoil

(Use sparingly on working surfaces.)

Door lock fork.

Door lock striker bolt.

IMPORTANT: Remove all lubricants that may have dropped or spread onto the external paint finish.

Cooling system

This must be checked and serviced regularly if the engine is to operate efficiently.

Corrosion protection

To protect components of the cooling system from corrosion the system should be filled or topped up only with premixed inhibitor solution or antifreeze.

Inhibitor solution, GMH HN1791 5% by volume in water.

Antifreeze solution, to GM1825M specification 50% by volume.

If you live in an area where water has a high level of mineral or chemical content, use rainwater or distilled water.

If you need to use borewater in an emergency—change it for the above coolant made with clean water as soon as possible.

Follow the directions on the pack when adding a corrosion inhibitor.

Coolant level

Very little loss occurs with a sealed cooling system and it is thus only rarely necessary to top up the coolant. To avoid the danger of being scalded, remove coolant surge tank-filler cap carefully when engine has been running so that pressure can escape slowly. This is necessary when the engine has been running recently. If coolant is added it should be clean and have a low lime content.

The coolant level in the expansion tank must reach a little above the mark when the system is cold. The level rises at engine operating temperature and drops when the engine is cooling down.

When closing, tighten coolant filler cap as far as it will go.

Temperature

Should irregularities in the coolant temperature occur, for example if the temperature indicator light comes on, the coolant level should be checked immediately and topped up. Consult your GMH Dealer without delay to remedy the fault.

It should occasionally be observed whether the coolant is actually returning to the coolant circuit after the engine has cooled down. Should the expansion tank level fall below the "COLD" mark the coolant should be replenished to a little over this mark.

If the coolant does not return to the coolant circuit after cooling down, the cooling system must be checked by your GMH Dealer to eliminate the problem.

Draining and flushing

Every twelve months or 20,000 km drain and refill the radiator.

Fill to the "COLD" mark on the surge tank with a premixed coolant comprising 95% clean water and 5% (by volume) corrosion inhibitor GM HN1791.

To drain the radiator—loosen the surge tank cap, locate the lower radiator hose and loosen the clamp fastening this hose to the radiator. Now disconnect this hose.

WARNING: Corrosion inhibitors are poisonous.

REMINDER: Replace and properly tighten all drain points before refilling.

Do not use cleaning chemicals to loosen scale unless the cooling system is afterwards thoroughly reverse flushed, otherwise loosened scale may clog the radiator water passages.

For complete removal of loose sediment and sludge from the radiator and water jacket, pressure flushing with an air and water gun is recommended, and as this method of flushing requires special equipment we suggest you have this work carried out by your GMH Dealer.

Use of anti-freeze fluid

Where a vehicle is to be parked overnight or operated for any length of time in regions where temperatures of 0°C or below are encountered (e.g.—snow areas), the recommended brand of anti-freeze fluid should be used in the cooling system in accordance with the instructions specified.

The recommended anti-freeze fluid is permanent type (ethylene glycol) to GM 1825M. Before adding, make a thorough check of the cooling system.

Do not mix different types of anti-freeze as they may be incompatable. If a different type has been used in the radiator, flush and refill with coolant before adding the GM 1825M anti-freeze.

Cold weather draining

If the recommended brand of anti-freeze fluid is not available, the radiator, and cylinder case, MUST be drained before parking to prevent the possible bursting of the radiator, or cracking of the cylinder block which can occur if the coolant freezes. However, damage could be caused to the heater core which may not be drained of coolant.

Air cleaner

The air cleaner element should be inspected every 6 months or 10,000 km and replaced every 24 months or 40,000 km. If the vehicle is operating in extremely dusty conditions for any length of time the air cleaner should be inspected and replaced more frequently.

Ensure that the thermal vacuum signal hose is connected to the carburettor and air cleaner when re-installing the air cleaner.

CAUTION: Do not remove the engine air cleaner unless temporary removal is necessary during repair or maintenence of the vehicle. When the air cleaner is removed backfiring can cause fire in the engine compartment.

Brake master cylinder

Every week check the fluid level in the master cylinder. The fluid level visible through the reservoir should be maintained between the MIN and MAX level markings with fluid to GMH HN1796 specification. If the fluid is between these levels do not remove master cylinder cap. If the master cylinder requires constant topping up it could indicate that a malfunction exists in which case it should be immediately brought to the attention of your servicing GMH Dealer.

Every 12 months the brake hydraulic system must be drained, flushed, and refilled with specified grade of brake fluid from a new freshly opened container.

Wiper/washer

Wiper blades—cleaning

Much of the oil road scum thrown up onto the windshield glass, causing smearing when the wiper is switched on, transfers onto the wiper blade. Many owners, whilst they methodically clean the windshield glass, omit to clean the wiper blades and consequently smearing of the glass reappears immediately the wiper blades are set in motion. The blades can be cleaned by simply lifting them off the windshield glass and then using warm water and a recognised washing fluid. If so desired, the wiper blade can be removed from the arm for cleaning purposes by simply disengaging it from the arm.

Washer reservoir

A plastic reservoir containing liquid for the windshield washer is mounted in the engine compartment. The Tailgate W/W reservoir is situated behind the removable panel in drivers side rear compartment. It is suggested that when checking the radiator coolant level, the washer reservoir be checked also. For a crystal clear view AC DELCO Optikleen Washer Solvent (Part No. M37068) can be used by adding from the graduated container, the recommended proportion.

CAUTION: Do not operate the wiper blades by hand as this may damage the wiper drive mechanism.

In dry conditions, if the wiper blades are used to clean dust and dirt from the windshield always use the washer system to wet the windshield. Ensure that the windshield washer reservoir is checked regularly all the year round.

Should the wiper blades be frozen to the windshield, it is imperative that they be lifted off and freed by hand before switching on the windshield wiper system.

Windshield notes

Windshield cleanliness

It is important, at all times, that the windshield surface be maintained in a clean condition so that the wiper blades may be as effective as possible in wiping clean the surface.

Use of the windshield washer and Optikleen washer solvent will assist in removing dirt and dust particularly when driving at a time when no rain is falling; however, every opportunity should be taken to wipe or wash the windshield by hand.

Abrasive materials must never be used to remove a build-up of road scum, etc., as a scratched windshield will cause difficulty in achieving proper vision, particularly in night driving. Therefore, after the windshield has been cleaned with a wet sponge, etc., it should be wiped dry with a soft, lint free cloth or even a ball of newspaper.

Battery (12 volt)

The battery is located in a metal cradle mounted on the left hand fender skirt in the engine compartment and the negative (−) terminal is "grounded". Never disconnect the battery or generator when the engine is running. Always keep the terminals clean and tight. Always connect positive (+) to positive (+), negative (−) to negative (−) whenever a battery charger is used.

Fluid level

The battery is a "low maintenance" type which uses very little water. It should not need to be topped up at less than 10,000 km intervals. In normal service check the level at monthly intervals. At high temperatures, or if driving long distances at high speeds, check the level more frequently.

The maximum level is when the acid is JUST TOUCHING the bottom of the vent tube. Add water only if the acid is more than 5 mm below the vent tube. Use distilled water. Add slowly. DO NOT overfill, particularly when the battery temperature is less than 20°C, as subsequent operation at high temperatures and on long distances may then cause loss of acid.

When cleaning batteries, wash first with a dilute ammonia or soda solution to neutralize any acid present. Then flush off with clean water. Care must be taken to keep the vent plugs tight so that the neutralizing solution does not enter any cells. Dry off the affected areas of the body, battery mounting and retainer, then repaint with paint resistant to sulphuric acid. After reconnecting battery cables, apply a thin coating of petroleum jelly to the battery posts and cable clamps to help retard corrosion.

CAUTION: Never expose a battery to open flame or electric spark—battery action generates hydrogen gas which is flammable and explosive. Don't allow battery fluid to contact skin, eyes, fabrics, or painted surfaces—battery fluid is a sulphuric acid solution which could cause serious personal injury or property damage. Flush any contacted area immediately with water. WEAR EYE PROTECTION SUCH AS INDUSTRIAL SAFETY SPECTACLES OR GOGGLES WHEN WORKING ON OR NEAR A BATTERY. Remove rings, metal watchbands and other metal jewellery before jump starting or working around a battery, and be careful in using metal tools—if such metal should contact the positive battery terminal (or metal in contact with it) and any other metal on the vehicle, a short circuit may occur which could cause personal injury. Batteries and battery acid should always be kept out of the reach of children.

Evaporative control system

Every 6 months or 10,000 kilometres have all fuel and vapour lines and hoses checked for proper connections and correct routing as well as condition. Remove canister and check for cracks or damage. Replace damaged or deteriorated parts as necessary. Replace whole canister.

Tyres

Inside the glove box you will find a chart showing correct tyre inflation pressures for your vehicle under different operating conditions.

Always check tyre pressure when the tyres are cold, and always use a tyre pressure gauge. Your eye can deceive. Tyre pressures must be checked at least every 14 days and before any long journey.

Tyre pressure recommendations

1. Tyre pressures should be checked when the tyres are cold (when the vehicle has been standing for 3 hours or more, or driven less than 2 kilometres).
2. Tyre inflation pressure may increase as much as 30 kPa (4 psi) when hot, (after the vehicle has been driven 15 kilometres or at speeds of more than 95 km/h. DO NOT reduce pressures to compensate for this build up. As a guide for checking warm/hot tyres under all conditions, allow pressure to read 10% above that recommended.
3. It is recommended that the pressures are checked at least weekly. For constant long distance or rough road travelling daily checking is recommended. To maximise the protection of tyres on vehicles operating for prolonged times over rough roads, i.e. particularly in outback conditions, it is recommended that the cold tyre inflation pressure recommended for high speed operation at maximum load condition as shown on the tyre placard is used.
4. Do not forget the spare tyre: It is advisable to maintain the spare at the **maximum recommended tyre inflation pressure** listed on the placard.

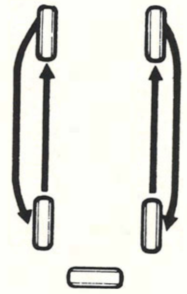
Tyre rotation

If no abnormal or uneven wear is evident, if you have not experienced any vibration, tyres need not be rotated.

Front tyres are more prone to wear on the shoulder while rear tyres wear more on the crown. Wear can be evened out by rotating the tyres.

Your GMH Dealer will be able to diagnose any unusual signs of wear and can also balance the wheels and tyres for you.

RADIAL TYRE ROTATION



Tyre replacement

Use only tyres recommended on the chart inside the glove box.

Don't mix cross ply and radial ply tyres on your vehicle and don't mix radial ply tyres with other types of tyres. New tyres should be fitted in pairs to the front but if replacing only one tyre, pair it with the least worn of the old tyres.

And if you replace all tyres with tyres of a different size, your speedometer reading may be affected. Have the car checked afterwards.

Tyres with a higher speed rating and/or with a maximum load rating in excess of that listed on the tyre placard for tyre size listed are also acceptable as replacements provided they are fitted to a suitable rim size.

Uneven or abnormal tyre wear is usually the result of incorrect inflation pressure, improper wheel alignment, wheels being out of balance, or poor driving habits. The original equipment tyres incorporates built-in tread wear bars which act as indicators to assist in determining when the tyres have worn to the point of needing immediate replacement.

When the wear bars appear, tyre replacement should not be delayed, in the interests of safety.

Radial ply tyres

Radial ply tyres have "Radial" marked on them. Because of the stiffening belt under the tread the ride characteristics of radial tyres may be somewhat different from that of conventional tyres.

The under-inflated appearance of the radial tyre is normal.

Tyres used at maximum speeds must be in good condition and not retreaded or regrooved. Refer to the chart inside your glove box for appropriate tyre pressures.

When driving in very rough country, radials should be inflated to the recommended pressure for maximum load condition plus the 30 kPa allowance for high speed operation regardless of the load being carried or the speed at which the vehicle is being driven.

			Maximum load rating		**Recommended cold pressure inflation kPa**			
Model	**Wheels**	**Tyre size**	**Listed**	**Others acceptable**	**Up to 3 passengers**		**Up to Max load**	
					Front	**Rear**	**Front**	**Rear**
Sedan and wagon SL & SL/X	Steel 5.50JJ x 13"	AR78S13	485 Kg	485 Kg or Greater	193	193	221	221
		BR70H14	560 Kg		193	193	221	221
		P175/75SR13	505 Kg		200	200	240	240
Sedan and wagon SL/E	Cast alloy 5.50JJ x 14"	P195/60/HR14	515 Kg	515 Kg or Greater	200	200	240	240

Heavy treads

Caution must be exercised when using tyres with heavy treads, including tyres designed to gain traction in bad weather conditions. At sustained high speeds, this type of tyre will run at higher temperatures than standard tyres and consequently should only be operated within the limits recommended by the manufacturer.

Always refer to your GMH Dealer if you have any doubts about the ability of the tyres on your car for the purpose you require.

Tyres and fast motoring

It should be noted that all the maximum speed recommendations require the following:

The tyres must be in

1. Good condition, the walls and treads being free of cuts, stones and abrasions.
2. Treads must not be excessively worn, tread pattern should still be visible over the entire tread surface.
3. The tyres should not be retreaded or regrooved.
4. The tyre pressures should be as shown on the tyre placard for loading and speed operation.
5. Ensure front and rear tyre pairs have comparable wear.

Suggested guide for checking hot tyres

As a guide for checking warm/hot tyre "under all conditions" allow pressure to read 4 psi (30 kPa) above that recommended for cold tyre.

Tyre traction

CAUTION: A decrease in driving, cornering and braking traction occurs when water, snow, ice, gravel, or other materials is on the road surface. Driving practices and vehicle speed should be adjusted to the road conditions.

When driving on wet or slushy roads, it is possible for a wedge of water to build up between the tyre and road surface. This phenomenon, known as hydro-planing, may cause partial or complete loss of traction, which adversely affects vehicle control and stopping ability. To reduce the possibility of traction loss, the following precautions should be observed.

1. Reduce speed levels during rainstorms or when roads are slushy and if the road has standing water or puddles.
2. Replace tyres when tread wear indicators are visible.
3. Check that tyres are properly inflated for speed range and vehicle loading.

Tyre damage and repair

Tyres with cuts, splits or cracks deep enough to expose the fabric must be replaced. Bulges also indicate internal damage, and these tyres should also be replaced. Tyres with doubtful damage should be removed from the wheel and examined by a competent person.

If a pressure loss occurs while driving, do not attempt to drive on the deflated tyre more than is necessary to stop safely. Driving even a short distance on a deflated tyre can damage it beyond repair.

When puncturing objects are removed, repairs will have to be made according to the recommendations of the tyre manufacturer.

It should always be remembered that a tyre which has been repaired will not be able to be operated safely at the rated maximum speed and due care should be taken.

Replacement wheels

When replacing wheels for any reason, care must be taken to ensure that the wheels are equivalent to those removed in diameter, rim width and offset.

WARNING: If non standard wheels are fitted to Camira, it is imperative that the new wheels have the same offset as standard wheels to maintain negative scrub radius steering geometry.

Service and maintenance

Owner maintenance and responsibility

The following items should be checked weekly between services:

- Engine oil level.
- Cooling system level (radiator).
- Brake master cylinder fluid level.
- Windshield washer reservoir level.
- Tailgate window wash/wipe reservoir.
- Battery terminals (for corrosion).
- Tyre pressures.
- Condition of tyres.

It is your responsibility to have your car serviced regularly and to ensure that the mechanic has attended to all points listed for that particular service. Not to do so may affect your warranty.

CAUTION: As with any machinery, extreme care should be taken when carrying out any inspections or maintenance job. If you have any doubts about your own ability, please have the job done by a qualified mechanic.

Owners must assume responsibility for maintenance of the following:

- Oil levels in engine.
- Fluid levels in auto. trans. and hydraulic brake systems.
- Coolant level.
- Tyre pressures.

Oil and fluid levels should be checked visually once a week.

Topping up is required when the level falls to the "add" markings.

Use only the specified lubricants.

Tyre pressures should be maintained at the maximum recommended pressure for the size and style of tyre. Refer to the tyre placard for this information. Use of the maximum recommended pressure provides superior protection for tyre side walls and road wheels against impact damage when negotiating rough surfaces and minimizes kerbing damage.

Owners should also report to their Dealer malfunction of locks, controls, instruments, seat belts.

Service dealer's responsibility

Your service dealer must attend to all items listed for any recommended service and must see that the validation coupon is signed.

Service coupons are in this book in the following section.

Owner's responsibility

Normal maintenance services as listed in this servicing schedule contained on pages 109 and 110 in this handbook, and replacement of service items, are the responsibility of the owner and as such are NOT considered, under the provisions of the new vehicle warranty, to be rectification of defects in material and workmanship.

Items such as wheel alignment, brake adjustment as a result of lining wear, etc., which may require servicing due to fair wear and tear, will be carried out at the owner's cost.

We strongly recommend that you read the warranty certificate at the front of the handbook, so that you are conversant with your entitlements.

Water and atmospheric conditions, varying road surfaces, individual driving habits and vehicle usage, greatly contribute to the need for constant maintenance services to promote efficient vehicle operation. (Refer over.)

GMH QUALITY SERVICE & PARTS

Operating conditions

Normal conditions

The maintenance instructions contained in this publication are based on the assumption that the vehicle will be used as designed and is operated in accordance with the instruction provided in the owner manual.

Extreme conditions

Extreme operating can be described as that where a vehicle operates continually for a period of 1 month or 1500 kilometres under the following conditions:

Condition

1. Dust, dirt, loose road metal.
2. Muddy and wet areas.
3. Cold weather—below 10°C.
4. Stop-start, as experienced in inner city driving.
5. Caravan or trailer hauling.

In such circumstances it is suggested that the following items be serviced more frequently than at the periods recommended in the maintenance plan.

Conditions	Items
1-3-4	Engine oil.
1	Engine oil filter.
1—2	Front suspension, steering, and brake system.
5	Automatic transaxle fluid.
1	Engine air cleaner element.
1	Brake servo air filter.
1	Wheel bearings.
2	Manual transmission, drive line joints.

If at any time it is considered that the above items or other items should be more frequently serviced due to the type of operation or before a long trip, discuss the situation with the service manager of your GMH Dealer.

Maintenance plan

The 3-step service concept

The fundamental points are:

1. A basic service interval period of 6 months or 10,000 kilometres whichever occurs first.
2. A "step" principle of 3 correlated services.
3. The frequency of these services is:
   "A" service items—serviced every 6 months or 10,000 km.
   "B" service items—serviced every 12 months or 20,000 km.
   "C" service items—serviced every 24 months or 40,000 km.

Service designation	—A—	—B—	—C—
Items	Group I	Groups I & II	Groups I, II & III

Refer to page 109 for Group Items.

Up to the 3rd step the items programmed in the earlier steps are included.

The total time/distance range of this maintenance schedule is 66 months or 110,000 kilometres.

Total programme

Pre-delivery service

1 month—1500 kilometres
Inspection and adjustment.

Then as required
(Months—km whichever occurs first).

A service 6 months—10,000 km
B service 12 months—20,000 km
A service 18 months—30,000 km
C service 24 months—40,000 km
A service 30 months—50,000 km
B service 36 months—60,000 km
A service 42 months—70,000 km
C service 48 months—80,000 km
A service 54 months—90,000 km
B service 60 months—100,000 km
A service 66 months—110,000 km

Maintenance

Once the first service has been completed, dependability and performance are influenced by the degree of maintenance the vehicle receives.

Safety, economy and dependability cannot be assured unless regular maintenance is performed, preferably by factory-trained technicians. It is preferable to receive these services from the dealer from whom the vehicle was purchased. However, maintenance schedules will be attended to by an authorised GMH Dealer on presentation of the owner handbook, no matter where you may be situated.

What the owner should do

When service, according to the time or distance interval, is due, the owner should present this owner handbook to a GMH Dealer as an authority to have the items listed attended to. After this work is completed, the owner should see that the validation record is stamped and signed by the dealer. This is important as it will not only assist in the determination of warranty claims, but enhance the value of the vehicle whenever resale is contemplated.

All operations listed on the service coupons should be carried out following the procedures set out in the appropriate current service literature.

What the servicing dealer has to do

Attend to all items listed for the particular service. When this has been done, it is most important that the owner handbook validation be signed by the dealer or his representative.

The one month—1500 kilometres service will be performed without cost for labour by the selling dealer.

This service may be carried out by another GMH Dealer provided you have a letter of introduction from the selling dealer. Your dealer will supply the necessary letter of introduction upon request.

Maintenance Plan

GROUP I UNDER HOOD OPERATIONS

- Check oil levels of auto. transaxle, brake master cylinder. Top up as necessary. Determine reasons for low levels and correct as necessary.
- Check battery electrolyte level.
- Fill windscreen wash reservoir.
- Lubricate clutch cable to fork lever pivot.
- Check coolant level, check for presence of inhibitor, investigate if level is low and check hoses for leaks.
- Lubricate throttle linkage.
- Lubricate auto. transaxle control cable pivots.
- Inspect exterior of radiator core for presence of material which would restrict air flow. Clean as necessary.
- Check automatic choke linkage operates freely.
- Inspect air conditioning condenser for obstruction of air path by leaves or foreign material, clean as necessary.
- Check battery terminals are tight on battery posts.
- Check engine idle speed and fast idle speed on choke cam. Adjust if necessary.
- Check operation of EGR valve.
- Check operation of cooling fan(s).
- Check and adjust if necessary alternator drive belt using gauge.
- Inspect condition of engine air filter element.
- Check air preheat control damper assembly operation, using vacuum source.
- Check operation of idle load compensator and adjust if necessary.
- Check condition of all fuel, vapour, vacuum and emissions hoses, check for proper connections. Report damaged or deteriorated parts.
- Check ignition timing. Adjust if necessary.

GROUP II UNDER HOOD OPERATIONS

- Replace spark plugs.
- Check throttle mechanism operation for full throttle and return to idle. Check for correct idle speed and adjust if necessary.
- Check operation of transaxle shift linkage and adjust as necessary. On auto-models check operation of neutral start switch following any adjustment to linkage.
- Drain, flush and refill cooling system. Recharge with inhibitor. Check for leaks.
- Drain, flush and refill brake hydraulic system with specified fluid from a freshly opened container. Bleed system and check brake performance.
- Replace in-line fuel filter.
- Check battery earth and harness earth connections to engine and frame for security and cleanliness.
- Check refrigerant charge at sight glass.
- Inspect air conditioning flexible hoses and pipes for leaks, routing or loose connections. Correct as necessary.

GROUP III UNDER HOOD OPERATIONS

- Check engine ventilation system, hoses and inlet manifold metering orifice for restriction and clean as necessary.
- Replace air filter element.
- Replace evaporative emissions canister.
- Check condition of camshaft drive belt. Inspect for cracks or excessive wear.

GROUP I UNDER VEHICLE OPERATIONS

- Check underbody and suspension for damage and report.
- Check steering joints for excessive free play and check boots for damage.
- Check front suspension struts for leaks.
- Inspect exhaust system, brake and fuel lines, shock absorbers for leaks or damage. Check mountings and attachments for damage. Report condition.
- Check evaporative emission canister drain tube is free from obstruction.
- Inspect manual transaxle shift cover and bellows for damage. Replace as necessary.
- Inspect and report condition of engine mountings and damper. Torque fasteners as necessary.
- Inspect tyres for irregular wear or damage and advise owner.

Maintenance Plan

Inflate tyres to recommended pressure.

Change engine oil filter.

Change engine oil.

Inspect front disc brake pads for wear (with road wheels removed).

Inspect rear brake linings and drums for wear, wipe off dust, check self adjusting mechanism.

Check manual transaxle—fluid level.

Tighten wheel bolts to specified torque.

Check drive shaft CV joint boots are correctly installed. Check for grease loss or damage. Report condition—correct as necessary.

Check air conditioning compressor mounting bolts for tightness, check and adjust (if necessary) compressor drive belt, using gauge.

Drain and refill manual transaxle fluid.

Lubricate park brake equalizer.

Lubricate front suspension control arm ball joints.

GROUP II UNDER VEHICLE OPERATIONS

Check front wheel toe and adjust if necessary.

Check steering gear is centred and exhibits no bind or free travel "on centre".

GROUP III UNDER VEHICLE OPERATIONS

Inspect, repack and adjust rear wheel bearings.

Drain and refill automatic transaxle fluid—replace filter.

Inspect suspension bushes and replace if necessary.

GROUP I INTERIOR VEHICLE OPERATIONS

Check operation of all lights.

Check park brake operation, adjust if necessary.

Check clutch pedal height and adjust if necessary.

Check operation of all vehicle controls, including door, rear compartment and window mechanisms, warning indicators, switches, ignition steering lock, electrical systems, hood lock and catch.

Check that heating, ventilation, demisting and air conditioning systems operate correctly and controls are correctly adjusted. Check that blower operates on each speed setting.

GROUP II INTERIOR VEHICLE OPERATIONS

Lubricate clutch pedal to cable connection.

Examine seat belts, examine webbing, buckle and retractor mechanism operation. Report any deficiencies.

GROUP I EXTERIOR VEHICLE OPERATIONS

Lubricate exterior door handle pivots, door and rear compartment strikers and hold open devices. Check and lubricate hood lock and catch.

GROUP II EXTERIOR VEHICLE OPERATIONS

Check headlamp aim and adjust if necessary.

GROUP I ROAD TEST

Check vehicle equipment and performance. Correct and report abnormal conditions.

Check auto transaxle shift pattern.

Check park pawl operation, (auto).

Check neutral start switch (auto).

Check gearshift manual operation.

**Additional Service—refer page 139*

N.B. It should be understood that whenever a B or C service is being carried out, some items on an earlier operation, may be superseded or modified by a later operation.

New Vehicle Preparation Validation

Your new vehicle has been inspected and prepared for delivery by your Dealer, in accordance with the manufacturer's New Vehicle Pre-Delivery Procedures.

Service Manager's Signature ....

Date .... P.T.O.

Pre-Delivery Operations

UNDER HOOD OPERATIONS

	Check oil levels of auto. transaxle, brake master cylinder. Top up as necessary. Determine reasons for low levels and correct as necessary.
	Check battery electrolyte level.
	Fill windscreen wash reservoir.
	Check coolant level, check for presence of inhibitor, investigate if level is low and check hoses for leaks.
	Check automatic choke linkage for free operation.
	Check operation of EGR valve.
	Check operation of cooling fan(s).
	Check battery earth and harness earth connections to engine and frame for security and cleanliness.
	Check battery terminals are tight on battery posts.
*	Check refrigerant charge at sight glass.
	Inspect condition of engine air filter element.
	Check air preheat control damper assembly operation, using vacuum source.
	Check operation of transaxle shift linkage and adjust as necessary. On auto-models check operation of neutral start switch following any adjustment to linkage.
*	Inspect air conditioning flexible hoses and pipes for leaks, routing or loose connections. Correct as necessary.
	Check condition of all fuel, vapour, vacuum and emissions hoses, check for proper connections. Report damaged or deteriorated parts.

UNDER VEHICLE OPERATIONS

	Check underbody and suspension for damage and report.
	Check manual transaxle—fluid level.
	Check drive shaft CV joints boots are correctly installed. Check for grease loss or damage. Report condition—correct as necessary.
	Check steering joints for excessive free play and check boots for damage.
	Check front suspension struts for leaks.
	Inspect exhaust system, brake and fuel lines, shock absorbers for leaks or damage. Check mountings and attachments for damage. Report condition.
	Check drive shaft circlip security to transaxle.
	Inspect manual transaxle shift cover and bellows for damage. Replace as necessary.
	Inspect and report condition of engine mountings and damper. Torque fasteners as necessary. Inflate tyres to recommended pressure.
	Tighten wheel bolts to specified torque.
	Check evaporative emission canister drain tube is free from obstruction.
	Check front wheel toe. Adjust if necessary.

INTERIOR VEHICLE OPERATIONS

	Check park brake operation, adjust if necessary.
	Check clutch pedal height and adjust.
	Check operation of all vehicle controls, including door, rear compartment and window mechanisms, warning indicators, switches, ignition steering lock, electrical systems, hood lock and catch.
	Check operation of all lights.
	Check that heating, ventilation, demisting and air conditioning systems operate correctly and controls are correctly adjusted. Check that blower operates on each speed setting.
	Examine seat belts, examine webbing, buckle and retractor mechanism operation, report any deficiency.
	Inspect body trim and floor coverings.
	Clean vehicle interior thoroughly.
	Check tool, jack and spare wheel stowage.
	Check front seats fore and aft adjustment.
	Check wagon rear seat operation.
	Check vertical height seat adjuster operation.

EXTERIOR VEHICLE OPERATIONS

	Clean vehicle thoroughly, wash and polish.

ROAD TEST

	Check vehicle equipment and performance. Correct and report abnormal conditions.
	Correct squeaks and rattles.
	Check auto. transaxle shift pattern.
	Check park pawl operation, (auto.).
	Check neutral start switch operation, (auto.).
	Check gearshift manual operation.
	Check steering wheel spoke position.

Delivery Certificate

The dealer has completed the vehicle identification certificate, and has explained to the purchaser the terms and conditions of the General Motors-Holden's Sales Pty. Ltd., new vehicle warranty and notices and the contents of the owner's handbook. The dealer has informed the purchaser of his responsibility in respect of vehicle maintenance.

The dealer has demonstrated to the purchaser the operation of the vehicle and of all options and accessories.

The purchaser has been informed in writing of the fitting of any and all equipment or accessories not marketed by GMH or an affiliated company, and of any alterations or modifications which have been made to the vehicle and the effect on the GMH sales new vehicle warranty of such fitting, alteration or modification.

The purchaser has inspected the vehicle and acknowledges its delivery in accordance with this delivery procedure.

Purchaser's Signature .... Date ....

Delivered by: Signature .... Date ....

Owner's Name Mr.
Mrs. ....
Miss

Address ....

Town & State .... Postcode ....

Reg. No. .... Model Name ....

V.I.N. .... Eng. No. ....

To ensure continued interest in your vehicle, GMH requests that subsequent owners (not original purchaser) fill in and mail one of the attached.

Subsequent Owner Vehicle Identification Certificate

Mr.
Owner's Mrs. ....
Name Miss

Address ....

Town .... Phone ....

State & Postcode ....

Reg. No. ....

Vehicle Identification Number (V.I.N.) ....

(Refer Specifications Section of this Manual for location)

Subsequent Owner Vehicle Identification Certificate

Mr.
Owner's Mrs. ....
Name Miss

Address ....

Town .... Phone ....

State & Postcode ....

Reg. No. ....

Vehicle Identification Number (V.I.N.) ....

(Refer Specifications Section of this Manual for location)

Place in an envelope and mail to:

The Manager — Warranty Administration,
Service Department,
General Motors—Holden's Sales Pty. Limited,
Box 548D, G.P.O.,
Melbourne,
Victoria. 3001.

Place in an envelope and mail to:

The Manager — Warranty Administration,
Service Department,
General Motors—Holden's Sales Pty. Limited,
Box 548D, G.P.O.,
Melbourne,
Victoria. 3001.

1 Month — 1500 Kilometre Inspection & Adjustment

This coupon should not be removed until the vehicle is presented for service.

Owner's Name Mr. Mrs. Miss ....

Address ....

Town & State .... Postcode ....

Reg. No. .... Model Name ....

V.I.N. .... Eng. No. ....

Selling Dealer's Stamp & Signature ....

Date of Acquisition ....

This vehicle has been thoroughly checked in accordance with the schedule on the reverse side of this coupon.

Servicing Dealer ....

Town .... State ....

Owner's Signature ....

---

1 Month — 1500 Kilometre

This vehicle has been thoroughly checked in accordance with the **1** month — **1,500** kilometre inspection and adjustment.

Dealer ....

Service Manager's Signature ....

Date .... Odometer Reading ....

GMH QUALITY SERVICE & PARTS

1 Month — 1500 Kilometre Inspection and Adjustment

UNDER HOOD OPERATIONS

☐ Check engine idle speed and fast idle speed on choke cam. Adjust if necessary.
☐ Check ignition timing. Adjust if necessary.
☐ Check oil levels of auto. transaxle, brake master cylinder. Top up as necessary. Determine reasons for low levels and correct as necessary.
☐ Check battery electrolyte level.
☐ Fill windscreen wash reservoir.
☐ Check coolant level, check for presence of inhibitor, investigate if level is low and check hoses for leaks.
☐ Check engine oil level—top up as required.
☐ Check and ajust if necessary alternator drive belt using gauge.
☐ Inspect condition of engine air filter element.
☐ Check air preheat control damper assembly operation, using vacuum source.
☐ Check condition of all fuel, vapour, vacuum and emissions hoses, check for proper connections. Report damaged or deteriorated parts.
☐ Check operation of idle load compensator—adjust if necessary.

UNDER VEHICLE OPERATIONS

☐ Check air conditioning compressor mounting bolts for tightness, check and adjust (if necessary) compressor drive belt, using gauge.
☐ Check steering gear is centred and exhibits no bind or free travel "on centre".
☐ Check wheel bolts for correct torque.

INTERIOR VEHICLE OPERATIONS

☐ Check clutch pedal height and adjust if necessary.
☐ Check operation of all vehicle controls, including door, rear compartment and window mechanisms, warning indicators, switches, ignition steering lock, electrical systems, hood lock and catch.
☐ Check wheel bolts for correct torque.

ROAD TEST

☐ Check vehicle equipment and performance. Correct and report abnormal conditions.
☐ Correct squeaks and rattles.
☐ Check auto. transaxle shift pattern.
☐ Check park pawl operation (auto.).
☐ Check neutral start switch operation (auto.).
☐ Check gearshift manual operation.

This Inspection and Adjustment will be carried out without charge to the owner except for any lubricants used.

The Designated Servicing Programme is not to be exceeded without the Owner's prior agreement to additional servicing charges.

6 Months
or
10,000 km

A SERVICE
refer page 107.

Dealer ....
Date ....
Odometer ....
Signed ....

GMH QUALITY SERVICE & PARTS

6 Months — 10,000 Kilometres

UNDER HOOD OPERATIONS

	Check oil levels of auto. transaxle, brake master cylinder. Top up as necessary. Determine reasons for low levels and correct as necessary.
	Check battery electrolyte level.
	Fill windscreen wash reservoir.
	Lubricate clutch cable to fork lever pivot.
	Check coolant level, check for presence of inhibitor, investigate if level is low and check hoses for leaks.
	Lubricate throttle linkage.
	Lubricate auto. transaxle control cable pivots.
	Inspect exterior of radiator core for presence of material which would restrict air flow. Clean as necessary.
	Check automatic choke linkage operates freely.
*	Inspect air conditioning condenser for obstruction of air path by leaves or foreign material, clean as necessary.
	Check battery terminals are tight on battery posts.
	Check engine idle speed and fast idle speed on choke cam. Adjust if necessary.
	Check operation of EGR valve.
	Check operation of cooling fan(s).
	Check and adjust if necessary alternator drive belt using gauge.
	Inspect condition of engine air filter element.
	Check air preheat control damper assembly operation, using vacuum source.
	Check operation of idle load compensator and adjust if necessary.
	Check condition of all fuel, vapour, vacuum and emissions hoses, check for proper connections. Report damaged or deteriorated parts.
	Check ignition timing. Adjust if necessary.

UNDER VEHICLE OPERATIONS

	Check underbody and suspension for damage and report.
	Check steering joints for excessive free play and check boots for damage.
	Check front suspension struts for leaks.
	Inspect exhaust system, brake and fuel lines, shock absorbers for leaks or damage. Check mountings and attachments for damage. Report condition.
	Check evaporative emission canister drain tube is free from obstruction.
	Inspect manual transaxle shift cover and bellows for damage. Replace as necessary.
	Inspect and report condition of engine mountings and damper. Torque fasteners as necessary.
	Inspect tyres for irregular wear or damage and advise owner.
	Inflate tyres to recommended pressure.
	Change engine oil filter.
	Change engine oil.
	Inspect front disc brake pads for wear (with road wheels removed).
	Inspect rear brake linings and drums for wear, wipe off dust, check self adjusting mechanism.
	Tighten wheel bolts to specified torque.
	Check drive shaft CV joint boots are correctly installed. Check for grease loss or damage. Report condition—correct as necessary.
	Check air conditioning compressor mounting bolts for tightness, check and adjust (if necessary) compressor drive belt, using gauge.
	Drain and refill manual transaxle fluid.
	Lubricate park brake equalizer.
	Lubricate front suspension control arm ball joints.

INTERIOR VEHICLE OPERATIONS

	Check operation of all lights.
	Check park brake operation, adjust if necessary.
	Check clutch pedal height and adjust if necessary.
	Check operation of all vehicle controls, including door, rear compartment and window mechanisms, warning indicators, switches, ignition steering lock, electrical systems, hood lock and catch.
	Check that heating, ventilation, demisting and air conditioning systems operate correctly and controls are correctly adjusted. Check that blower operates on each speed setting.

EXTERIOR VEHICLE OPERATIONS

	Lubricate exterior door handle pivots, door and rear compartment strikers and hold open devices. Check and lubricate hood lock and catch.

ROAD TEST

	Check vehicle equipment and performance. Correct and report abnormal conditions.
	Check auto transaxle shift pattern.
	Check park pawl operation, (auto).
	Check neutral start switch (auto).
	Check gearshift manual operation.

**Additional Service—refer page 139*

12 Months
or
20,000 km

B SERVICE
refer page 107.

Dealer ....
Date ....
Odometer ....
Signed ....

GMH QUALITY SERVICE & PARTS

12 Months — 20,000 Kilometres

UNDER HOOD OPERATIONS

☐	Check oil levels of auto. transaxle, brake master cylinder. Top up as necessary. Determine reasons for low levels and correct as necessary.
☐	Check battery electrolyte level.
☐	Fill windscreen wash reservoir.
☐	Lubricate clutch cable to fork lever pivot.
☐	Lubricate throttle linkage.
☐	Lubricate auto. transaxle control cable pivots.
☐	Inspect exterior of radiator core for presence of material which would restrict air flow. Clean as necessary.
☐	Check automatic choke linkage operates freely.
*	Inspect air conditioning condenser for obstruction of air path by leaves or foreign material, clean as necessary.
☐	Check battery terminals are tight on battery posts.
☐	Check engine idle speed and fast idle speed on choke cam. Adjust if necessary.
☐	Check operation of EGR valve.
☐	Check operation of cooling fan(s).
☐	Check and adjust if necessary alternator drive belt using gauge.
☐	Inspect condition of engine air filter element.
☐	Check air preheat control damper assembly operation, using vacuum source.
☐	Check operation of idle load compensator and adjust if necessary.
☐	Check condition of all fuel, vapour, vacuum and emissions hoses, check for proper connections. Report damaged or deteriorated parts.
☐	Check ignition timing. Adjust if necessary.
☐	Replace spark plugs.
☐	Check throttle mechanism operation for full throttle and return to idle. Check for correct idle speed and adjust if necessary.
☐	Check operation of transaxle shift linkage and adjust as necessary. On auto-models check operation of neutral start switch following any adjustment to linkage.
☐	Drain, flush and refill cooling system. Recharge with inhibitor. Check for leaks.
☐	Drain, flush and refill brake hydraulic system with specified fluid from a freshly opened container. Bleed system and check brake performance.
☐	Replace in-line fuel filter.
☐	Check battery earth and harness earth connections to engine and frame for security and cleanliness.
☐	Check refrigerant charge at sight glass.
*	Inspect air conditioning flexible hoses and pipes for leaks, routing or loose connections. Correct as necessary.

UNDER VEHICLE OPERATIONS

☐	Check underbody and suspension for damage and report.
☐	Check steering joints for excessive free play and check boots for damage.
☐	Check front suspension struts for leaks.
☐	Inspect exhaust system, brake and fuel lines, shock absorbers for leaks or damage. Check mountings and attachments for damage. Report condition.
☐	Check evaporative emission canister drain tube is free from obstruction.
☐	Inspect manual transaxle shift cover and bellows for damage. Replace as necessary.
☐	Inspect and report condition of engine mountings and damper. Torque fasteners as necessary.
☐	Inspect tyres for irregular wear or damage and advise owner.
☐	Inflate tyres to recommended pressure.
☐	Change engine oil filter.
☐	Change engine oil.

	Inspect front disc brake pads for wear (with road wheels removed).
	Inspect rear brake linings and drums for wear, wipe off dust, check self adjusting mechanism.
	Check manual transaxle—fluid level.
	Tighten wheel bolts to specified torque.
	Check drive shaft CV joint boots are correctly installed. Check for grease loss or damage. Report condition—correct as necessary.
*	Check air conditioning compressor mounting bolts for tightness, check and adjust (if necessary) compressor drive belt, using gauge.
	Lubricate park brake equalizer.
	Lubricate front suspension control arm ball joints.
	Check front wheel toe and adjust if necessary.
	Check steering gear is centred and exhibits no bind or free travel "on centre".

INTERIOR VEHICLE OPERATIONS

	Check operation of all lights.
	Check park brake operation, adjust if necessary.
	Check clutch pedal height and adjust if necessary.
	Check operation of all vehicle controls, including door, rear compartment and window mechanisms, warning indicators, switches, ignition steering lock, electrical systems, hood lock and catch.
	Check that heating, ventilation, demisting and air conditioning systems operate correctly and controls are correctly adjusted. Check that blower operates on each speed setting.
	Lubricate clutch pedal to cable connection.
	Examine seat belts, examine webbing, buckle and retractor mechanism operation. Report any deficiencies.

EXTERIOR VEHICLE OPERATIONS

	Lubricate exterior door handle pivots, door and rear compartment strikers and hold open devices. Check and lubricate hood lock and catch.
	Check headlamp aim and adjust if necessary.

ROAD TEST

	Check vehicle equipment and performance. Correct and report abnormal conditions.
	Check auto transaxle shift pattern.
	Check park pawl operation, (auto).
	Check neutral start switch (auto).
	Check gearshift manual operation.

**Additional Service—refer page 139*

18 Months
or
30,000 km

A
SERVICE
refer page 107.

Dealer ....
Date ....
Odometer ....
Signed ....

GMH QUALITY SERVICE & PARTS

18 Months — 30,000 Kilometres

UNDER HOOD OPERATIONS

	Check oil levels of auto. transaxle, brake master cylinder. Top up as necessary. Determine reasons for low levels and correct as necessary.
	Check battery electrolyte level.
	Fill windscreen wash reservoir.
	Lubricate clutch cable to fork lever pivot.
	Check coolant level, check for presence of inhibitor, investigate if level is low and check hoses for leaks.
	Lubricate throttle linkage.
	Lubricate auto. transaxle control cable pivots.
	Inspect exterior of radiator core for presence of material which would restrict air flow. Clean as necessary.
	Check automatic choke linkage operates freely.
*	Inspect air conditioning condenser for obstruction of air path by leaves or foreign material, clean as necessary.
	Check battery terminals are tight on battery posts.
	Check engine idle speed and fast idle speed on choke cam. Adjust if necessary.
	Check operation of EGR valve.
	Check operation of cooling fan(s).
	Check and adjust if necessary alternator drive belt using gauge.
	Inspect condition of engine air filter element.
	Check air preheat control damper assembly operation, using vacuum source.
	Check operation of idle load compensator and adjust if necessary.
	Check condition of all fuel, vapour, vacuum and emissions hoses, check for proper connections. Report damaged or deteriorated parts.
	Check ignition timing. Adjust if necessary.

UNDER VEHICLE OPERATIONS

	Check underbody and suspension for damage and report.
	Check steering joints for excessive free play and check boots for damage.
	Check front suspension struts for leaks.
	Inspect exhaust system, brake and fuel lines, shock absorbers for leaks or damage. Check mountings and attachments for damage. Report condition.
	Check evaporative emission canister drain tube is free from obstruction.
	Inspect manual transaxle shift cover and bellows for damage. Replace as necessary.
	Inspect and report condition of engine mountings and damper. Torque fasteners as necessary.
	Inspect tyres for irregular wear or damage and advise owner.
	Inflate tyres to recommended pressure.
	Change engine oil filter.
	Change engine oil.
	Inspect front disc brake pads for wear (with road wheels removed).
	Inspect rear brake linings and drums for wear, wipe off dust, check self adjusting mechanism.
	Check manual transaxle—fluid level.
	Tighten wheel bolts to specified torque.
	Check drive shaft CV joint boots are correctly installed. Check for grease loss or damage. Report condition—correct as necessary.
*	Check air conditioning compressor mounting bolts for tightness, check and adjust (if necessary) compressor drive belt, using gauge.
	Lubricate park brake equalizer.
	Lubricate front suspension control arm ball joints.

INTERIOR VEHICLE OPERATIONS

	Check operation of all lights.
	Check park brake operation, adjust if necessary.
	Check clutch pedal height and adjust if necessary.
	Check operation of all vehicle controls, including door, rear compartment and window mechanisms, warning indicators, switches, ignition steering lock, electrical systems, hood lock and catch.
	Check that heating, ventilation, demisting and air conditioning systems operate correctly and controls are correctly adjusted. Check that blower operates on each speed setting.

EXTERIOR VEHICLE OPERATIONS

	Lubricate exterior door handle pivots, door and rear compartment strikers and hold open devices. Check and lubricate hood lock and catch.

ROAD TEST

	Check vehicle equipment and performance. Correct and report abnormal conditions.
	Check auto transaxle shift pattern.
	Check park pawl operation, (auto).
	Check neutral start switch (auto).
	Check gearshift manual operation.

**Additional Service—refer page 139*

24 Months
or
40,000 km

C SERVICE
refer page 107.

Dealer ....

Date ....

Odometer ....

Signed ....

GMH QUALITY SERVICE & PARTS

24 Months — 40,000 Kilometres

UNDER HOOD OPERATIONS

☐	Check oil level of brake master cylinder. Top up as necessary. Determine reasons for low levels and correct as necessary.
☐	Check battery electrolyte level.
☐	Fill windscreen wash reservoir.
☐	Lubricate clutch cable to fork lever pivot.
☐	Lubricate throttle linkage.
☐	Lubricate auto. transaxle control cable pivots.
☐	Inspect exterior of radiator core for presence of material which would restrict air flow. Clean as necessary.
☐	Check automatic choke linkage operates freely.
*	Inspect air conditioning condenser for obstruction of air path by leaves or foreign material, clean as necessary.
☐	Check battery terminals are tight on battery posts.
☐	Check engine idle speed and fast idle speed on choke cam. Adjust if necessary.
☐	Check operation of EGR valve.
☐	Check operation of cooling fan(s).
☐	Check and adjust if necessary alternator drive belt using gauge.
☐	Inspect condition of engine air filter element.
☐	Check air preheat control damper assembly operation, using vacuum source.
☐	Check operation of idle load compensator and adjust if necessary.
☐	Check condition of all fuel, vapour, vacuum and emissions hoses, check for proper connections. Report damaged or deteriorated parts.
☐	Check ignition timing. Adjust if necessary.
☐	Replace spark plugs.
☐	Check throttle mechanism operation for full throttle and return to idle. Check for correct idle speed and adjust if necessary.
☐	Check operation of transaxle shift linkage and adjust as necessary. On auto-models check operation of neutral start switch following any adjustment to linkage.
☐	Drain, flush and refill cooling system. Recharge with inhibitor. Check for leaks.
☐	Drain, flush and refill brake hydraulic system with specified fluid from a freshly opened container. Bleed system and check brake performance.
☐	Replace in-line fuel filter.
☐	Check battery earth and harness earth connections to engine and frame for security and cleanliness.
☐	Check refrigerant charge at sight glass.
*	Inspect air conditioning flexible hoses and pipes for leaks, routing or loose connections. Correct as necessary.
☐	Check engine ventilation system, hoses and inlet manifold metering orifice for restriction and clean as necessary.
☐	Replace air filter element.
☐	Replace evaporative emissions canister.
☐	Check condition of camshaft drive belt. Inspect for cracks or excessive wear.

UNDER VEHICLE OPERATIONS

☐	Check underbody and suspension for damage and report.
☐	Check steering joints for excessive free play and check boots for damage.
☐	Check front suspension struts for leaks.
☐	Inspect exhaust system, brake and fuel lines, shock absorbers for leaks or damage. Check mountings and attachments for damage. Report condition.
☐	Check evaporative emission canister drain tube is free from obstruction.
☐	Inspect manual transaxle shift cover and bellows for damage. Replace as necessary.

	Inspect and report condition of engine mountings and damper. Torque fasteners as necessary.
	Inspect tyres for irregular wear or damage and advise owner.
	Inflate tyres to recommended pressure.
	Change engine oil filter.
	Change engine oil.
	Inspect front disc brake pads for wear (with road wheels removed).
	Inspect rear brake linings and drums for wear, wipe off dust, check self adjusting mechanism.
	Tighten wheel bolts to specified torque.
*	Check drive shaft CV joint boots are correctly installed. Check for grease loss or damage. Report condition—correct as necessary.
*	Check air conditioning compressor mounting bolts for tightness, check and adjust (if necessary) compressor drive belt, using gauge.
	Drain and refill manual transaxle fluid.
	Lubricate park brake equalizer.
	Lubricate front suspension control arm ball joints.
	Check front wheel toe and adjust if necessary.
	Check steering gear is centred and exhibits no bind or free travel "on centre".
	Inspect, repack and adjust rear wheel bearings.
	Drain and refill automatic transaxle fluid—replace filter.
	Inspect suspension bushes and replace if necessary.

INTERIOR VEHICLE OPERATIONS

	Check operation of all lights.
	Check park brake operation, adjust if necessary.
	Check clutch pedal height and adjust if necessary.
	Check operation of all vehicle controls, including door, rear compartment and window mechanisms, warning indicators, switches, ignition steering lock, electrical systems, hood lock and catch.
	Check that heating, ventilation, demisting and air conditioning systems operate correctly and controls are correctly adjusted. Check that blower operates on each speed setting.
	Lubricate clutch pedal to cable connection.
	Examine seat belts, examine webbing, buckle and retractor mechanism operation. Report any deficiencies.

EXTERIOR VEHICLE OPERATIONS

	Lubricate exterior door handle pivots, door and rear compartment strikers and hold open devices. Check and lubricate hood lock and catch.
	Check headlamp aim and adjust if necessary.

ROAD TEST

	Check vehicle equipment and performance. Correct and report abnormal conditions.
	Check auto transaxle shift pattern.
	Check park pawl operation, (auto).
	Check neutral start switch (auto).
	Check gearshift manual operation.

**Additional Service—refer page 139*

GMH QUALITY SERVICE & PARTS

30 Months — 50,000 Kilometres

UNDER HOOD OPERATIONS

	Check oil levels of auto. transaxle, brake master cylinder. Top up as necessary. Determine reasons for low levels and correct as necessary.
	Check battery electrolyte level.
	Fill windscreen wash reservoir.
	Lubricate clutch cable to fork lever pivot.
	Check coolant level, check for presence of inhibitor, investigate if level is low and check hoses for leaks.
	Lubricate throttle linkage.
	Lubricate auto. transaxle control cable pivots.
	Inspect exterior of radiator core for presence of material which would restrict air flow. Clean as necessary.
	Check automatic choke linkage operates freely.
*	Inspect air conditioning condenser for obstruction of air path by leaves or foreign material, clean as necessary.
	Check battery terminals are tight on battery posts.
	Check engine idle speed and fast idle speed on choke cam. Adjust if necessary.
	Check operation of EGR valve.
	Check operation of cooling fan(s).
	Check and adjust if necessary alternator drive belt using gauge.
	Inspect condition of engine air filter element.
	Check air preheat control damper assembly operation, using vacuum source.
	Check operation of idle load compensator and adjust if necessary.
	Check condition of all fuel, vapour, vacuum and emissions hoses, check for proper connections. Report damaged or deteriorated parts.
	Check ignition timing. Adjust if necessary.

UNDER VEHICLE OPERATIONS

	Check underbody and suspension for damage and report.
	Check steering joints for excessive free play and check boots for damage.
	Check front suspension struts for leaks.
	Inspect exhaust system, brake and fuel lines, shock absorbers for leaks or damage. Check mountings and attachments for damage. Report condition.
	Check evaporative emission canister drain tube is free from obstruction.
	Inspect manual transaxle shift cover and bellows for damage. Replace as necessary.
	Inspect and report condition of engine mountings and damper. Torque fasteners as necessary.
	Inspect tyres for irregular wear or damage and advise owner.
	Inflate tyres to recommended pressure.
	Change engine oil filter.
	Change engine oil.
	Inspect front disc brake pads for wear (with road wheels removed).
	Inspect rear brake linings and drums for wear, wipe off dust, check self adjusting mechanism.
	Check manual transaxle—fluid level.
	Tighten wheel bolts to specified torque.
	Check drive shaft CV joint boots are correctly installed. Check for grease loss or damage. Report condition—correct as necessary.
*	Check air conditioning compressor mounting bolts for tightness, check and adjust (if necessary) compressor drive belt, using gauge.
	Lubricate park brake equalizer.
	Lubricate front suspension control arm ball joints.

30 Months
or
50,000 km

A SERVICE
refer page 107.

Dealer ....
Date ....
Odometer ....
Signed ....

INTERIOR VEHICLE OPERATIONS

☐	Check operation of all lights.
☐	Check park brake operation, adjust if necessary.
☐	Check clutch pedal height and adjust if necessary.
☐	Check operation of all vehicle controls, including door, rear compartment and window mechanisms, warning indicators, switches, ignition steering lock, electrical systems, hood lock and catch.
☐	Check that heating, ventilation, demisting and air conditioning systems operate correctly and controls are correctly adjusted. Check that blower operates on each speed setting.

EXTERIOR VEHICLE OPERATIONS

☐	Lubricate exterior door handle pivots, door and rear compartment strikers and hold open devices. Check and lubricate hood lock and catch.

ROAD TEST

☐	Check vehicle equipment and performance. Correct and report abnormal conditions.
☐	Check auto transaxle shift pattern.
☐	Check park pawl operation, (auto).
☐	Check neutral start switch (auto).
☐	Check gearshift manual operation.

**Additional Service—refer page 139*

36 Months
or
60,000 km

B
SERVICE
refer page 107.

Dealer ....
Date ....
Odometer ....
Signed ....

GMH QUALITY SERVICE & PARTS

36 Months — 60,000 Kilometres

UNDER HOOD OPERATIONS

	Check oil levels of auto. transaxle, brake master cylinder. Top up as necessary. Determine reasons for low levels and correct as necessary.
	Check battery electrolyte level.
	Fill windscreen wash reservoir.
	Lubricate clutch cable to fork lever pivot.
	Lubricate throttle linkage.
	Lubricate auto. transaxle control cable pivots.
	Inspect exterior of radiator core for presence of material which would restrict air flow. Clean as necessary.
	Check automatic choke linkage operates freely.
*	Inspect air conditioning condenser for obstruction of air path by leaves or foreign material, clean as necessary.
	Check battery terminals are tight on battery posts.
	Check engine idle speed and fast idle speed on choke cam. Adjust if necessary.
	Check operation of EGR valve.
	Check operation of cooling fan(s).
	Check and adjust if necessary alternator drive belt using gauge.
	Inspect condition of engine air filter element.
	Check air preheat control damper assembly operation, using vacuum source.
	Check operation of idle load compensator and adjust if necessary.
	Check condition of all fuel, vapour, vacuum and emissions hoses, check for proper connections. Report damaged or deteriorated parts.
	Check ignition timing. Adjust if necessary.
	Replace spark plugs.
	Check throttle mechanism operation for full throttle and return to idle. Check for correct idle speed and adjust if necessary.
	Check operation of transaxle shift linkage and adjust as necessary. On auto-models check operation of neutral start switch following any adjustment to linkage.
	Drain, flush and refill cooling system. Recharge with inhibitor. Check for leaks.
	Drain, flush and refill brake hydraulic system with specified fluid from a freshly opened container. Bleed system and check brake performance.
	Replace in-line fuel filter.
	Check battery earth and harness earth connections to engine and frame for security and cleanliness.
	Check refrigerant charge at sight glass.
*	Inspect air conditioning flexible hoses and pipes for leaks, routing or loose connections. Correct as necessary.

UNDER VEHICLE OPERATIONS

	Check underbody and suspension for damage and report.
	Check steering joints for excessive free play and check boots for damage.
	Check front suspension struts for leaks.
	Inspect exhaust system, brake and fuel lines, shock absorbers for leaks or damage. Check mountings and attachments for damage. Report condition.
	Check evaporative emission canister drain tube is free from obstruction.
	Inspect manual transaxle shift cover and bellows for damage. Replace as necessary.
	Inspect and report condition of engine mountings and damper. Torque fasteners as necessary.
	Inspect tyres for irregular wear or damage and advise owner.
	Inflate tyres to recommended pressure.
	Change engine oil filter.
	Change engine oil.

	Inspect front disc brake pads for wear (with road wheels removed).
	Inspect rear brake linings and drums for wear, wipe off dust, check self adjusting mechanism.
	Check manual transaxle—fluid level.
	Tighten wheel bolts to specified torque.
	Check drive shaft CV joint boots are correctly installed. Check for grease loss or damage. Report condition—correct as necessary.
*	Check air conditioning compressor mounting bolts for tightness, check and adjust (if necessary) compressor drive belt, using gauge.
	Lubricate park brake equalizer.
	Lubricate front suspension control arm ball joints.
	Check front wheel toe and adjust if necessary.
	Check steering gear is centred and exhibits no bind or free travel "on centre".

INTERIOR VEHICLE OPERATIONS

	Check operation of all lights.
	Check park brake operation, adjust if necessary.
	Check clutch pedal height and adjust if necessary.
	Check operation of all vehicle controls, including door, rear compartment and window mechanisms, warning indicators, switches, ignition steering lock, electrical systems, hood lock and catch.
	Check that heating, ventilation, demisting and air conditioning systems operate correctly and controls are correctly adjusted. Check that blower operates on each speed setting.
	Lubricate clutch pedal to cable connection.
	Examine seat belts, examine webbing, buckle and retractor mechanism operation. Report any deficiencies.

EXTERIOR VEHICLE OPERATIONS

	Lubricate exterior door handle pivots, door and rear compartment strikers and hold open devices. Check and lubricate hood lock and catch.
	Check headlamp aim and adjust if necessary.

ROAD TEST

	Check vehicle equipment and performance. Correct and report abnormal conditions.
	Check auto transaxle shift pattern.
	Check park pawl operation, (auto).
	Check neutral start switch (auto).
	Check gearshift manual operation.

**Additional Service—refer page 139*

42 Months
or
70,000 km

A SERVICE
refer page 107.

Dealer ....
Date ....
Odometer ....
Signed ....

GMH QUALITY SERVICE & PARTS

42 Months — 70,000 Kilometres

UNDER HOOD OPERATIONS

	Check oil levels of auto. transaxle, brake master cylinder. Top up as necessary. Determine reasons for low levels and correct as necessary.
	Check battery electrolyte level.
	Fill windscreen wash reservoir.
	Lubricate clutch cable to fork lever pivot.
	Check coolant level, check for presence of inhibitor, investigate if level is low and check hoses for leaks.
	Lubricate throttle linkage.
	Lubricate auto. transaxle control cable pivots.
	Inspect exterior of radiator core for presence of material which would restrict air flow. Clean as necessary.
	Check automatic choke linkage operates freely.
*	Inspect air conditioning condenser for obstruction of air path by leaves or foreign material, clean as necessary.
	Check battery terminals are tight on battery posts.
	Check engine idle speed and fast idle speed on choke cam. Adjust if necessary.
	Check operation of EGR valve.
	Check operation of cooling fan(s).
	Check and adjust if necessary alternator drive belt using gauge.
	Inspect condition of engine air filter element.
	Check air preheat control damper assembly operation, using vacuum source.
	Check operation of idle load compensator and adjust if necessary.
	Check condition of all fuel, vapour, vacuum and emissions hoses, check for proper connections. Report damaged or deteriorated parts.
	Check ignition timing. Adjust if necessary.

UNDER VEHICLE OPERATIONS

	Check underbody and suspension for damage and report.
	Check steering joints for excessive free play and check boots for damage.
	Check front suspension struts for leaks.
	Inspect exhaust system, brake and fuel lines, shock absorbers for leaks or damage. Check mountings and attachments for damage. Report condition.
	Check evaporative emission canister drain tube is free from obstruction.
	Inspect manual transaxle shift cover and bellows for damage. Replace as necessary.
	Inspect and report condition of engine mountings and damper. Torque fasteners as necessary.
	Inspect tyres for irregular wear or damage and advise owner.
	Inflate tyres to recommended pressure.
	Change engine oil filter.
	Change engine oil.
	Inspect front disc brake pads for wear (with road wheels removed).
	Inspect rear brake linings and drums for wear, wipe off dust, check self adjusting mechanism.
	Check manual transaxle—fluid level.
	Tighten wheel bolts to specified torque.
	Check drive shaft CV joint boots are correctly installed. Check for grease loss or damage. Report condition—correct as necessary.
*	Check air conditioning compressor mounting bolts for tightness, check and adjust (if necessary) compressor drive belt, using gauge.
	Lubricate park brake equalizer.
	Lubricate front suspension control arm ball joints.

INTERIOR VEHICLE OPERATIONS

	Check operation of all lights.
	Check park brake operation, adjust if necessary.
	Check clutch pedal height and adjust if necessary.
	Check operation of all vehicle controls, including door, rear compartment and window mechanisms, warning indicators, switches, ignition steering lock, electrical systems, hood lock and catch.
	Check that heating, ventilation, demisting and air conditioning systems operate correctly and controls are correctly adjusted. Check that blower operates on each speed setting.

EXTERIOR VEHICLE OPERATIONS

	Lubricate exterior door handle pivots, door and rear compartment strikers and hold open devices. Check and lubricate hood lock and catch.

ROAD TEST

	Check vehicle equipment and performance. Correct and report abnormal conditions.
	Check auto transaxle shift pattern.
	Check park pawl operation, (auto).
	Check neutral start switch (auto).
	Check gearshift manual operation.

**Additional Service—refer page 139*

48 Months
or
80,000 km

C SERVICE
refer page 107.

Dealer ....
Date ....
Odometer ....
Signed ....

GMH QUALITY SERVICE & PARTS

48 Months — 80,000 Kilometres

UNDER HOOD OPERATIONS

	Check oil levels of auto. transaxle, brake master cylinder. Top up as necessary. Determine reasons for low levels and correct as necessary.
	Check battery electrolyte level.
	Fill windscreen wash reservoir.
	Lubricate clutch cable to fork lever pivot.
	Lubricate throttle linkage.
	Lubricate auto. transaxle control cable pivots.
	Inspect exterior of radiator core for presence of material which would restrict air flow. Clean as necessary.
	Check automatic choke linkage operates freely.
*	Inspect air conditioning condenser for obstruction of air path by leaves or foreign material, clean as necessary.
	Check battery terminals are tight on battery posts.
	Check engine idle speed and fast idle speed on choke cam. Adjust if necessary.
	Check operation of EGR valve.
	Check operation of cooling fan(s).
	Check and adjust if necessary alternator drive belt using gauge.
	Inspect condition of engine air filter element.
	Check air preheat control damper assembly operation, using vacuum source.
	Check operation of idle load compensator and adjust if necessary.
	Check condition of all fuel, vapour, vacuum and emissions hoses, check for proper connections. Report damaged or deteriorated parts.
	Check ignition timing. Adjust if necessary.
	Replace spark plugs.

	Check throttle mechanism operation for full throttle and return to idle. Check for correct idle speed and adjust if necessary.
	Check operation of transaxle shift linkage and adjust as necessary. On auto-models check operation of neutral start switch following any adjustment to linkage.
	Drain, flush and refill cooling system. Recharge with inhibitor. Check for leaks.
	Drain, flush and refill brake hydraulic system with specified fluid from a freshly opened container. Bleed system and check brake performance.
	Replace in-line fuel filter.
	Check battery earth and harness earth connections to engine and frame for security and cleanliness.
	Check refrigerant charge at sight glass.
*	Inspect air conditioning flexible hoses and pipes for leaks, routing or loose connections. Correct as necessary.
	Check engine ventilation system, hoses and inlet manifold metering orifice for restriction and clean as necessary.
	Replace air filter element.
	Replace evaporative emissions canister.
	Check condition of camshaft drive belt. Inspect for cracks or excessive wear.

UNDER VEHICLE OPERATIONS

	Check underbody and suspension for damage and report.
	Check steering joints for excessive free play and check boots for damage.
	Check front suspension struts for leaks.
	Inspect exhaust system, brake and fuel lines, shock absorbers for leaks or damage. Check mountings and attachments for damage. Report condition.
	Check evaporative emission canister drain tube is free from obstruction.
	Inspect manual transaxle shift cover and bellows for damage. Replace as necessary.

	Inspect and report condition of engine mountings and damper. Torque fasteners as necessary.
	Inspect tyres for irregular wear or damage and advise owner.
	Inflate tyres to recommended pressure.
	Change engine oil filter.
	Change engine oil.
	Inspect front disc brake pads for wear (with road wheels removed).
	Inspect rear brake linings and drums for wear, wipe off dust, check self adjusting mechanism.
	Tighten wheel bolts to specified torque.
	Check drive shaft CV joint boots are correctly installed. Check for grease loss or damage. Report condition—correct as necessary.
*	Check air conditioning compressor mounting bolts for tightness, check and adjust (if necessary) compressor drive belt, using gauge.
	Drain and refill manual transaxle fluid.
	Lubricate park brake equalizer.
	Lubricate front suspension control arm ball joints.
	Check front wheel toe and adjust if necessary.
	Check steering gear is centred and exhibits no bind or free travel "on centre".
	Inspect, repack and adjust rear wheel bearings.
	Drain and refill automatic transaxle fluid—replace filter.
	Inspect suspension bushes and replace if necessary.

INTERIOR VEHICLE OPERATIONS

	Check operation of all lights.
	Check park brake operation, adjust if necessary.
	Check clutch pedal height and adjust if necessary.
	Check operation of all vehicle controls, including door, rear compartment and window mechanisms, warning indicators, switches, ignition steering lock, electrical systems, hood lock and catch.
	Check that heating, ventilation, demisting and air conditioning systems operate correctly and controls are correctly adjusted. Check that blower operates on each speed setting.
	Lubricate clutch pedal to cable connection.
	Examine seat belts, examine webbing, buckle and retractor mechanism operation. Report any deficiencies.

EXTERIOR VEHICLE OPERATIONS

	Lubricate exterior door handle pivots, door and rear compartment strikers and hold open devices. Check and lubricate hood lock and catch.
	Check headlamp aim and adjust if necessary.

ROAD TEST

	Check vehicle equipment and performance. Correct and report abnormal conditions.
	Check auto transaxle shift pattern.
	Check park pawl operation, (auto).
	Check neutral start switch (auto).
	Check gearshift manual operation.

**Additional Service—refer page 139*

54 Months
or
90,000 km

A SERVICE
refer page 107.

Dealer ....
Date ....
Odometer ....
Signed ....

GMH QUALITY SERVICE & PARTS

54 Months — 90,000 Kilometres

UNDER HOOD OPERATIONS

	Check oil levels of auto. transaxle, brake master cylinder. Top up as necessary. Determine reasons for low levels and correct as necessary.
	Check battery electrolyte level.
	Fill windscreen wash reservoir.
	Lubricate clutch cable to fork lever pivot.
	Check coolant level, check for presence of inhibitor, investigate if level is low and check hoses for leaks.
	Lubricate throttle linkage.
	Lubricate auto. transaxle control cable pivots.
	Inspect exterior of radiator core for presence of material which would restrict air flow. Clean as necessary.
	Check automatic choke linkage operates freely.
*	Inspect air conditioning condenser for obstruction of air path by leaves or foreign material, clean as necessary.
	Check battery terminals are tight on battery posts.
	Check engine idle speed and fast idle speed on choke cam. Adjust if necessary.
	Check operation of EGR valve.
	Check operation of cooling fan(s).
	Check and adjust if necessary alternator drive belt using gauge.
	Inspect condition of engine air filter element.
	Check air preheat control damper assembly operation, using vacuum source.
	Check operation of idle load compensator and adjust if necessary.
	Check condition of all fuel, vapour, vacuum and emissions hoses, check for proper connections. Report damaged or deteriorated parts.
	Check ignition timing. Adjust if necessary.

UNDER VEHICLE OPERATIONS

	Check underbody and suspension for damage and report.
	Check steering joints for excessive free play and check boots for damage.
	Check front suspension struts for leaks.
	Inspect exhaust system, brake and fuel lines, shock absorbers for leaks or damage. Check mountings and attachments for damage. Report condition.
	Check evaporative emission canister drain tube is free from obstruction.
	Inspect manual transaxle shift cover and bellows for damage. Replace as necessary.
	Inspect and report condition of engine mountings and damper. Torque fasteners as necessary.
	Inspect tyres for irregular wear or damage and advise owner.
	Inflate tyres to recommended pressure.
	Change engine oil filter.
	Change engine oil.
	Inspect front disc brake pads for wear (with road wheels removed).
	Inspect rear brake linings and drums for wear, wipe off dust, check self adjusting mechanism.
	Check manual transaxle—fluid level.
	Tighten wheel bolts to specified torque.
	Check drive shaft CV joint boots are correctly installed. Check for grease loss or damage. Report condition—correct as necessary.
*	Check air conditioning compressor mounting bolts for tightness, check and adjust (if necessary) compressor drive belt, using gauge.
	Lubricate park brake equalizer.
	Lubricate front suspension control arm ball joints.

INTERIOR VEHICLE OPERATIONS

	Check operation of all lights.
	Check park brake operation, adjust if necessary.
	Check clutch pedal height and adjust if necessary.
	Check operation of all vehicle controls, including door, rear compartment and window mechanisms, warning indicators, switches, ignition steering lock, electrical systems, hood lock and catch.
	Check that heating, ventilation, demisting and air conditioning systems operate correctly and controls are correctly adjusted. Check that blower operates on each speed setting.

EXTERIOR VEHICLE OPERATIONS

	Lubricate exterior door handle pivots, door and rear compartment strikers and hold open devices. Check and lubricate hood lock and catch.

ROAD TEST

	Check vehicle equipment and performance. Correct and report abnormal conditions.
	Check auto transaxle shift pattern.
	Check park pawl operation, (auto).
	Check neutral start switch (auto).
	Check gearshift manual operation.

**Additional Service—refer page 139*

60 Months
or
100,000 km

B SERVICE
refer page 107.

Dealer ....
Date ....
Odometer ....
Signed ....

GMH QUALITY SERVICE & PARTS

60 Months — 100,000 Kilometres

UNDER HOOD OPERATIONS

☐	Check oil levels of auto. transaxle, brake master cylinder. Top up as necessary. Determine reasons for low levels and correct as necessary.
☐	Check battery electrolyte level.
☐	Fill windscreen wash reservoir.
☐	Lubricate clutch cable to fork lever pivot.
☐	Lubricate throttle linkage.
☐	Lubricate auto. transaxle control cable pivots.
☐	Inspect exterior of radiator core for presence of material which would restrict air flow. Clean as necessary.
☐	Check automatic choke linkage operates freely.
*	Inspect air conditioning condenser for obstruction of air path by leaves or foreign material, clean as necessary.
☐	Check battery terminals are tight on battery posts.
☐	Check engine idle speed and fast idle speed on choke cam. Adjust if necessary.
☐	Check operation of EGR valve.
☐	Check operation of cooling fan(s).
☐	Check and adjust if necessary alternator drive belt using gauge.
☐	Inspect condition of engine air filter element.
☐	Check air preheat control damper assembly operation, using vacuum source.
☐	Check operation of idle load compensator and adjust if necessary.
☐	Check condition of all fuel, vapour, vacuum and emissions hoses, check for proper connections. Report damaged or deteriorated parts.
☐	Check ignition timing. Adjust if necessary.
☐	Replace spark plugs.
☐	Check throttle mechanism operation for full throttle and return to idle. Check for correct idle speed and adjust if necessary.
☐	Check operation of transaxle shift linkage and adjust as necessary. On auto-models check operation of neutral start switch following any adjustment to linkage.
☐	Drain, flush and refill cooling system. Recharge with inhibitor. Check for leaks.
☐	Drain, flush and refill brake hydraulic system with specified fluid from a freshly opened container. Bleed system and check brake performance.
☐	Replace in-line fuel filter.
☐	Check battery earth and harness earth connections to engine and frame for security and cleanliness.
☐	Check refrigerant charge at sight glass.
*	Inspect air conditioning flexible hoses and pipes for leaks, routing or loose connections. Correct as necessary.

UNDER VEHICLE OPERATIONS

☐	Check underbody and suspension for damage and report.
☐	Check steering joints for excessive free play and check boots for damage.
☐	Check front suspension struts for leaks.
☐	Inspect exhaust system, brake and fuel lines, shock absorbers for leaks or damage. Check mountings and attachments for damage. Report condition.
☐	Check evaporative emission canister drain tube is free from obstruction.
☐	Inspect manual transaxle shift cover and bellows for damage. Replace as necessary.
☐	Inspect and report condition of engine mountings and damper. Torque fasteners as necessary.
☐	Inspect tyres for irregular wear or damage and advise owner.
☐	Inflate tyres to recommended pressure.
☐	Change engine oil filter.
☐	Change engine oil.

	Inspect front disc brake pads for wear (with road wheels removed).
	Inspect rear brake linings and drums for wear, wipe off dust, check self adjusting mechanism.
	Check manual transaxle—fluid level.
	Tighten wheel bolts to specified torque.
	Check drive shaft CV joint boots are correctly installed. Check for grease loss or damage. Report condition—correct as necessary.
*	Check air conditioning compressor mounting bolts for tightness, check and adjust (if necessary) compressor drive belt, using gauge.
	Lubricate park brake equalizer.
	Lubricate front suspension control arm ball joints.
	Check front wheel toe and adjust if necessary.
	Check steering gear is centred and exhibits no bind or free travel "on centre".

INTERIOR VEHICLE OPERATIONS

	Check operation of all lights.
	Check park brake operation, adjust if necessary.
	Check clutch pedal height and adjust if necessary.
	Check operation of all vehicle controls, including door, rear compartment and window mechanisms, warning indicators, switches, ignition steering lock, electrical systems, hood lock and catch.
	Check that heating, ventilation, demisting and air conditioning systems operate correctly and controls are correctly adjusted. Check that blower operates on each speed setting.
	Lubricate clutch pedal to cable connection.
	Examine seat belts, examine webbing, buckle and retractor mechanism operation. Report any deficiencies.

EXTERIOR VEHICLE OPERATIONS

	Lubricate exterior door handle pivots, door and rear compartment strikers and hold open devices. Check and lubricate hood lock and catch.
	Check headlamp aim and adjust if necessary.

ROAD TEST

	Check vehicle equipment and performance. Correct and report abnormal conditions.
	Check auto transaxle shift pattern.
	Check park pawl operation, (auto).
	Check neutral start switch (auto).
	Check gearshift manual operation.

Additional Service—refer page 139

Dealer ....

Date ....

Odometer ....

Signed ....

66 Months
or
110,000 km

A
SERVICE
refer page 107.

GMH QUALITY SERVICE & PARTS

66 Months — 110,000 Kilometres

UNDER HOOD OPERATIONS

	Check oil levels of auto. transaxle, brake master cylinder. Top up as necessary. Determine reasons for low levels and correct as necessary.
	Check battery electrolyte level.
	Fill windscreen wash reservoir.
	Lubricate clutch cable to fork lever pivot.
	Check coolant level, check for presence of inhibitor, investigate if level is low and check hoses for leaks.
	Lubricate throttle linkage.
	Lubricate auto. transaxle control cable pivots.
	Inspect exterior of radiator core for presence of material which would restrict air flow. Clean as necessary.
	Check automatic choke linkage operates freely.
*	Inspect air conditioning condenser for obstruction of air path by leaves or foreign material, clean as necessary.
	Check battery terminals are tight on battery posts.
	Check engine idle speed and fast idle speed on choke cam. Adjust if necessary.
	Check operation of EGR valve.
	Check operation of cooling fan(s).
	Check and adjust if necessary alternator drive belt using gauge.
	Inspect condition of engine air filter element.
	Check air preheat control damper assembly operation, using vacuum source.
	Check operation of idle load compensator and adjust if necessary.
	Check condition of all fuel, vapour, vacuum and emissions hoses, check for proper connections. Report damaged or deteriorated parts.
	Check ignition timing. Adjust if necessary.

UNDER VEHICLE OPERATIONS

	Check underbody and suspension for damage and report.
	Check steering joints for excessive free play and check boots for damage.
	Check front suspension struts for leaks.
	Inspect exhaust system, brake and fuel lines, shock absorbers for leaks or damage. Check mountings and attachments for damage. Report condition.
	Check evaporative emission canister drain tube is free from obstruction.
	Inspect manual transaxle shift cover and bellows for damage. Replace as necessary.
	Inspect and report condition of engine mountings and damper. Torque fasteners as necessary.
	Inspect tyres for irregular wear or damage and advise owner.
	Inflate tyres to recommended pressure.
	Change engine oil filter.
	Change engine oil.
	Inspect front disc brake pads for wear (with road wheels removed).
	Inspect rear brake linings and drums for wear, wipe off dust, check self adjusting mechanism.
	Check manual transaxle—fluid level.
	Tighten wheel bolts to specified torque.
	Check drive shaft CV joint boots are correctly installed. Check for grease loss or damage. Report condition—correct as necessary.
*	Check air conditioning compressor mounting bolts for tightness, check and adjust (if necessary) compressor drive belt, using gauge.
	Lubricate park brake equalizer.
	Lubricate front suspension control arm ball joints.

INTERIOR VEHICLE OPERATIONS

☐	Check operation of all lights.
☐	Check park brake operation, adjust if necessary.
☐	Check clutch pedal height and adjust if necessary.
☐	Check operation of all vehicle controls, including door, rear compartment and window mechanisms, warning indicators, switches, ignition steering lock, electrical systems, hood lock and catch.
☐	Check that heating, ventilation, demisting and air conditioning systems operate correctly and controls are correctly adjusted. Check that blower operates on each speed setting.

EXTERIOR VEHICLE OPERATIONS

☐	Lubricate exterior door handle pivots, door and rear compartment strikers and hold open devices. Check and lubricate hood lock and catch.

ROAD TEST

☐	Check vehicle equipment and performance. Correct and report abnormal conditions.
☐	Check auto transaxle shift pattern.
☐	Check park pawl operation, (auto).
☐	Check neutral start switch (auto).
☐	Check gearshift manual operation.

**Additional Service—refer page 139*

Suggested Labour Times

For Work Performed During Maintenance Schedule Services

"A" SERVICE — BASIC SERVICE TIME — 1.2 HR.
"B" SERVICE — BASIC SERVICE TIME — 2.3 HR.
"C" SERVICE — BASIC SERVICE TIME — 3.4 HR.

THE OWNER WILL BE CHARGED FOR ALL LUBRICATIONS AND MATERIALS USED PLUS LABOUR AT THE TIMES RECOMMENDED ABOVE.

ADDITIONS TO BASIC SERVICE

The service times above are for service to a basic vehicle.

Additional time and material required for servicing optional equipment fitted to a basic vehicle must be added to the suggested labour time and charges.

The repairing or replacing of any part found faulty during a service check and not covered by GMH Warranty will be added to the charges.

WHERE ANY DEFICIENCIES ARE NOTED SUCH ITEMS SHOULD BE REPORTED TO THE OWNEROPERATOR SO THAT THE EXTRA WORK REQUIRED CAN BE AUTHORISED.

ADDITIONAL SERVICES & TIMES WHERE APPLICABLE:

MANUAL TRANSMISSION—
FIRST "A" SERVICE—0.4 HR.

AIR CONDITIONING—A, B & C SERVICE—0.2 HR.

AUTOMATIC TRANSMISSION SERVICE—
C SERVICE—0.2 HR.

INDEX

A

Accelerator pedal 45
Air cleaner 98
Air conditioning 33
Anti-freeze fluid 97
Anti-theft ignition steering lock 20
Appearance care
  Paint and appearance items 85
  —Vehicle cleaning 85
  —Cleaning of interior 85-87
  —Cleaning of exterior 87-90
Ash tray cleaning 86
Automatic transaxle
  —Operation 43-44
  —Maintenance 95
  —Fluid capacity 65

B

Back-up lamp
  —Operation 42
  —Replacement 57
  —Specification 58
Battery 100
Bulb
  —Replacement 56-58
  —Specifications 58
Brake
  —Operation 45
  —Warning park light 27
  —Brake failure light 27
  —Disc 45
  —Drum 45
  —Parking 45
  —Master cylinder 98
  —Split circuit system 45

C

Capacities 65
Caravan and trailer towing 59-60
Carbon monoxide warning 19
Carburettor mixture 65
Carpet cleaning 86
Child and infant restraints 18
Cigarette lighter 29
Cleaning of exterior 87-90
  —Preliminary steps 87
  —Glass 88
  —Washing 88
  —Polishing 90
  —Chromium plated parts 89
  —Paint work inspection 89
Cleaning of interior 85-87
  —Care and cleaning of upholstery 85
  —Cleaning carpets 86
  —Cleaning the seat belts 86
  —Cleaning of ash trays 86
Clock 26
Clutch pedal 45
Computer, trip and clock 39-41
Controls
  —Rear vision mirrors 13
  —Window 12
  —Steering column 20-22
  —Transaxle 42-44
  —Floor 45
  —Instrument panel 23
  —Ventilation 30-33
Cooling system 97
  —Overheating 52
  —Filling the cooling system 97
  —Drainage and flushing 97
  —Corrosion protection 97
  —Anti-freeze 97
  —Capacity 65
Corrosion protection 97

D

Dealer list 75-83
Dimensions (vehicle) 64
Dipping (headlamp) 21
Disc brakes 45
Dome lamp 28
  —Replacement 58
  —Specification 58
Door
  —Locks 10-11
  —Drain holes 87
Drum brakes 45

E

Emission control systems 67-71
Emergency conditions 54
  —Emergency starting 53-54
  —Spare wheel stowage 49
  —Wheel trim removal 49
  —Wheel changing 50-51
  —Overheating 52
  —Towing a disabled vehicle 54
Emergency
  —Push starting 54
  —Jump starting 53
Engine
  —Fuel requirements 93
  —Initial oil fill 91
  —Maintaining oil level 92
  —Oil consumption 91
  —Oil filter replacement 92

—Oil change intervals 93
—Oil viscosity grades 94
—Data 65
—Oil capacities 65
—Number 64
Evaporative control system 100
Exhaust gas
—Carbon monoxide warning 19

F

Floor controls
—Accelerator pedal 45
—Brake operation 45
—Brake warning light 27
—Clutch pedal 45
—Disc brakes 45
—Drum brakes 45
—Parking brakes 45
—Power assisted brakes 45
—Split circuit brake system 45
Flow through ventilation 30
Fuel
—Filler locking cap 12
—Gauge 26
—Requirements 93, 146
—Economy 4-7
—Tank capacity 65
—Filling 146
Fuel economy indicator 5, 24
Fumes (petrol) 8
Fuse system 55

G

Generator indicator light 2
Getting to know your Camira 3-18
—Safe driving 8
—Keys and locks 10-12
—Rear vision mirrors 13
—Running in 3
—Seat adjustment 14
—Window controls 12
—Seat belts 15-18
—Trailer and caravan towing 59-60
Glove compartment 11

H

Hazard warning flashers 27, 29
Head restraint 14
Heated rear window 28
Heater demister 31-33
Headlamp
—Dipping 21
—Replacement 56
—Specification 58
—Washer/wipers 22
High beam indicator light 27
Horns 22

I

Identification number 63
Ignition steering lock 20
Indicator lights 27-28
Infant and child restraints 18
Insect spot cleaning 88
Instruments 23-26
—Bulb replacement 56-58
—Bulb specification 58
Instrument panel 23
—Light switch 21
—Headlamp dipping 21
—Heated rear window switch 28
—Radio power antenna 29
—Cigarette lighter 29
—Windshield wipers and washers 22
Interior light
—Bulb replacement 58

J

Jack 49-50
Jump starting 53-54

K

Keys 10

L

Lamps
—Turn signal 21
—Headlamp dipping 21
—Light switch 21
—Bulb replacement 56-58
—Bulb specification 58
Lane change indication 27
Lap/sash combination belt 16
Lap type belt 15
Licence plate lamp
—Replacement 57
—Specification 58
Light
—Indicator high beam 27
—Switch 21
Loading information 61
Locks (and keys)
—Keys 10
—Door lock operation 10-11
—Compartment lock operation 12
—Fuel filler locking cap 13
—Anti-theft ignition steering lock 10
—Engine hood 146
Lubricants 96

M

Maintenance certificates 115-138
Maintenance plan 107
Manual transaxle 42

Mirrors (rear vision) 13
Model identification 64

O

Odometer 24
Oil
 —Pressure gauge 25
 —Pressure indicator light 27
 —Maintaining level 91-92
 —Consumption 91
 —Filter replacement 92
 —Change intervals 93
 —Viscosity grades 94
 —Transaxle oils 95
Overheating 52
Owner relations 73-74
Owners responsibility 105

P

Paint work 85, 89
Parking brake 45
Parking lamp
 —Replacement 56
 —Specification 58
Petrol fumes 8
Polishing 89
Pollution and your new vehicle 19
Push starting 54
Power assisted brakes 45
Power operated
 —Radio antenna 29

R

Radio 34-38
 —Power antenna 59
Radiator 96-97
 —Overheating 52
Rear vision mirrors 13
Running in 3

S

Safety check list 46
Safety compliance plate 63
Seat adjustment 14-15
 —Head restraint 14
 —Height adjustment 14
 —Lumbar support adjustment 14
Seat belts
 —General 15-18
 —Lap/sash retractor belt 16
 —Lap type belt 16
 —Infant and child restraints 18
 —Cleaning 17
Serial numbers 63-64
Service and maintenance 104
Service station information 150-151
Shock absorbers 61
Spark plug gap 65
Spare wheel storage 49
Specifications
 —Serial numbers 64
 —Model identification 64
 —Vehicle dimensions 64
 —Wheel bolt torques 66
 —Vehicle identification number 63
 —Engine data 65
 —Capacities 65
 —Fuse system 55
 —Headlamp and bulb specifications 58
Speedometer 24
Split circuit brake system 45
Starting and driving 47
Starting and operating 19
 —Exhaust gas 19
 —Steering column controls 20
 —Starting and driving 47
 —Transmission controls 42-44
 —Floor controls 45
 —Instrument panel 23
 —Instrument dials 24-26
 —Indicator lights 27-28
 —Switches 28-29
 —Ventilation systems 30-33
Steering
 —Lock 20
Steering column controls
 —Anti-theft ignition steering lock 20
 —Horns 22
 —Windshield wipers/washers 22
 —Lane change indication 21
 —Turn signal operation 21
 —Headlamp dipping 21
Stereo cassette player 36-38
Stop/tail lamp
 —Replacement 57
 —Specification 58
Superlift shock absorbers 61

T

Tachometer 24
Tape player 36-38
Temperature
 —Gauge 25
Towing a disabled vehicle 54
Trailer and caravan hauling 59-60
 —Towbar load 59-60
 —Maintenance (automatic transaxle) 59
 —Running in period 59
 —Electrical connection 59
 —Permissible operating loads 59-60
 —Driving hints when towing 60
Transaxle controls
 —4 speed manual 42
 —Automatic 43-44

Trip computer and clock 39-41
Turn signal
  —Operation 21
  —Indicator light 27
Turn signal lamp
  —Replacement
    Front 57
    Rear 57
  —Specification 58
Tyres 66, 101-103

U

Upholstery cleaning 85

V

Valve clearances 65
Vehicle
  —Loading information 61
  —Identification number 63
  —Dimensions 64
  —Weight chart 61
Ventilation systems
  —Explanation of symbols 31
  —Flow through system 30
  —Heater/demister 31-33
  —Air conditioning 33
Voltmeter 25

W

Warning lights
  —Brake 27
  —Generator 27
  —Oil pressure 27
  —Hazard warning 27
Washing 85
Weight chart 61
Wheel
  —Storage and replacement 49
Wheel changing
  —Jack 50-51
  —Bolt torques 66
Wheel and tyres 66
Window controls 12
Windshield
  —Wipers and washers 22
  —Cleanliness 99
  —Wiper blades (cleaning) 99
  —Washer reservoir 99

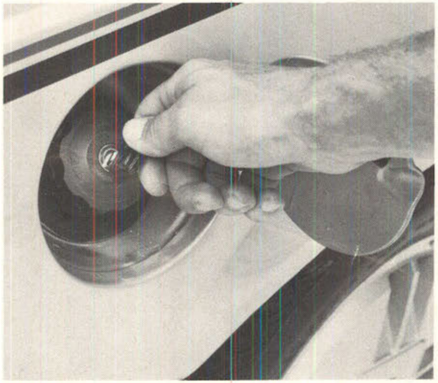
Service station information

Fuel

The fuel filler is located above and behind the rear wheel arch on the drivers side. A flap conceals the fuel filler cap.

This vehicle is designed to operate on a good quality clean fuel of 97 Octane Rating (Super).

CAUTION: Petrol is extremely flammable and highly explosive under certain conditions. Always stop the engine and do not smoke or allow open flames or sparks near the vehicle when refuelling. If petrol fumes are noticed while driving, the cause should be determined and corrected without delay.



Filling the fuel tank

Overfilling of the fuel tank can affect the evaporative emission control system.

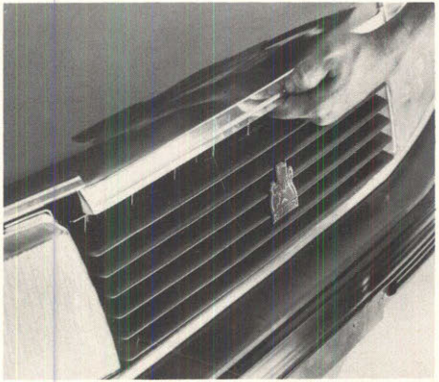
To avoid this, the following recommendation is made:

Fuel tanks should always be filled at the intermediate or fast fill rate. After initial shut-off (or vent blow back) no more than 3 litres of fuel should be added. This retains the tank's ability to accommodate fuel expansion.

Engine hood lock and catch

The hood lock is operated in two steps by means of a release lever or handle and a separate safety catch.

To open the engine hood, pull hood lock release handle located beneath the instrument panel, to the right of the steering column. This allows the hood to release but is prevented from opening by the safety catch. To open completely, reach in between the grille and hood to lift safety catch upward. Hold in this position, raise hood and support by inserting support rod into the provided slot. For closing, return support rod to its resting position and lower hood gradually to be finally dropped by its own weight.



Always check to make certain hood is properly secured. If necessary check that release handle below the instrument panel is pushed-in to its normal position.

Engine oil dipstick

Check the oil level as the last operation when stopped for fuel. Maintain oil level between TOP and BOTTOM marks on the dipstick. (Refer to page 91).

Radiator coolant level

The vehicle has a sealed coolant system. Topping up the fluid should be carried out by filling the bottle to the correct level as indicated on the bottle. Whilst the engine is cold maintain the level at the COLD mark on the coolant recovery bottle. Remove the bottle cap carefully—see page 97.

Battery

Check electrolyte fluid level monthly. If the fluid level is low, add distilled water to bring level to cover the plates. (Refer to page 100 for additional information.)

Windshield washer

Check reservoir fluid level weekly. Use a washer fluid additive such as Optikleen. (Refer to page 99 for further notes.)

Tyre pressures

Check pressures at least weekly and adjust as need. **Refer to pages 101 to 103 and to the Tyre Placard located on the inside of the glove compartment.**

Brakes

Check operation of brakes frequently. Promptly report to your GMH Dealer any change in brake performance, increase in pedal operating effort or increase in pedal travel.

COPYRIGHT—GENERAL MOTORS-HOLDEN'S SALES PTY. LTD.
(Reproduction in whole or part is prohibited without written approval)

A HOLDEN PUBLICATION

Printed in Australia by The Dominion Press, North Blackburn 3130

ACCIDENTS

All motorists are advised to learn what to do at the scene of an accident, particularly where persons are injured. Injured people can choke to death if their air passages are not cleared. They can bleed to death unless the bleeding is stopped. They may require mouth-to-mouth resuscitation, may have to be moved, even though badly injured. It is important that you understand how to avoid further damaging an injured neck or back or other broken limbs.

The following notes may help.

- **Part 1. Accident—being involved.**
- **Part 2. Accident—being a witness.**
- **Part 3. Medical assistance.**

Part 1. Accident—being involved

If you are involved in an accident you are advised to do as follows:

Stop immediately.

Remember that time is vital. Remain calm and alert. Think quickly and clearly.

Give all possible assistance to all injured persons. (See Part 3 Medical Assistance.)

Send for police and ambulance if anyone has been injured. Send information as accurately as possible. Give the exact location, the number of injured people and a brief report on the overall situation.

Perhaps take charge of the situation.

Warn all other traffic approaching the scene. Turn off ignition switches. Stop any smoking near spilt petrol. In darkness, try and light up the area to warn others.

Clear the road of accident debris.

Exchange your name, address, vehicle registration number and the vehicle owner's name and address with the other parties involved in the accident.

If damage to property only has occurred, report the facts to the owner of the damaged property or to his or her representative; to any police present at the scene or to the nearest Police Station.

Try and note all important facts because such details may be important if needed later.

Part 2. Accident—being a witness

If you witness a road accident or it becomes your task to stop and help at the scene of an accident, do this:

Keep in mind that an observant witness can prove most helpful. Some day you yourself might be very glad of help from a witness.

DO NOT stop at the scene of an accident *just to be a spectator*.

Where other people are already in attendance and giving assistance, **you should stop only if you can contribute assistance.**

Give what assistance you can to any injured persons. (See Part 3 Medical Assistance.)

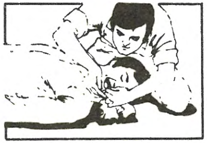
Follow most of the steps suggested in Part 1. Perhaps you may have to take charge of the accident situation.

Part 3. Medical Assistance

Keep calm and think clearly.

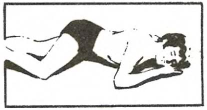
Your experience may not be much but do your best. Don't just stand by and let an injured person die.

- Look after the unconscious person first. Check for breathing. If no breathing, then check if air passages are clear, i.e. nose and mouth. Use your fingers to clear air passages if necessary. If the air way is clear then mouth-to-mouth resuscitation may be needed at once.



Unconscious people can choke.
Carefully turn to one side.
Tilt the head back slightly.
Wipe out the mouth with your finger to remove blood, vomit, broken teeth or dentures.

- You must be most careful in moving an injured person. Often it is best not to move at all but, in conditions of danger, that is not always possible. Serious and permanent damage can be done to an injured neck or back if not supported during movement. NEVER BEND A NECK OR BACK. KEEP THEM STRAIGHT. All injured limbs require support when an injured person has to be moved.
- Provided it is not dangerous to do so because of other injuries, an unconscious person will do best in the "coma position" illustrated here.



Lay the person on one side and—if it will not aggravate any injuries—then: Bend the uppermost knee until the thigh is at right angle to body.
Bend the uppermost arm and elbow so that the hand lies near the face.
Gently pull the underneath arm so that it rests straight on the ground free of any body weight.

- Try to stop bleeding by applying direct pressure, using your hands, or by pressing torn flesh together. Use any clean cloth available. Fold cloths to make pads. If necessary, press one pad on top of another. Keep pressure around edges of a wound BUT NEVER USE A TOURNIQUET.

Shock may be treated by reassurance, relieving pain, controlling any bleeding and keeping the injured person warm *but not hot.* Best not to give any fluids and NEVER ALCOHOL.

- If the injured person is in danger and has to be moved, try and have three or four people help and concentrate on not bending the neck, spine and injured limbs. **Keeping the neck and spine straight is most important.**

Illustrations reproduced from "The Victorian Road Code" with permission from Road Safety and Traffic Authority of Victoria.